| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GCATAAGGCATAGAACATGTCCTATTTGAATTTTCCGACTTAG TGAAATTGTAAGTGTTTGAATGTGTATGGGCAGCAGAGCTTCT TCTAAGTGCATTTCTCTCATCTGTCACACAATGTA | 1578 |
| | TACACATTCAAACACTT | 1579 |
| | AAGTGTTTGAATGTGTA | 1580 |
| Adenomatous polyposis coli Tyr935Term TAC-TAG | GACAGATGAGAGAAATGCACTTAGAAGAAGCTCTGCTGCCCA TACACATTCAAACACTTACAATTTCACTAAGTCGGAAAATTCAA ATAGGACATGTTCTATGCCTTATGCCAAATTAGAA | 1581 |
| | TTCTAATTTGGCATAAGGCATAGAACATGTCCTATTTGAATTTT CCGACTTAGTGAAATTGTAAGTGTTTGAATGTGTATGGGCAGC AGAGCTTCTTCTAAGTGCATTTCTCTCATCTGTC | 1582 |
| | AACACTTACAATTTCAC | 1583 |
| | GTGAAATTGTAAGTGTT | 1584 |
| Adenomatous polyposis coli Tyr935Term TAC-TAA | GACAGATGAGAGAAATGCACTTAGAAGAAGCTCTGCTGCCCA TACACATTCAAACACTTACAATTTCACTAAGTCGGAAAATTCAA ATAGGACATGTTCTATGCCTTATGCCAAATTAGAA | 1585 |
| | TTCTAATTTGGCATAAGGCATAGAACATGTCCTATTTGAATTTT CCGACTTAGTGAAATTGTAAGTGTTTGAATGTGTATGGGCAGC AGAGCTTCTTCTAAGTGCATTTCTCTCATCTGTC | 1586 |
| | AACACTTACAATTTCAC | 1587 |
| | GTGAAATTGTAAGTGTT | 1588 |
| Adenomatous polyposis coli Tyr1000Term TAC-TAA | ACCCTCGATTGAATCCTATTCTGAAGATGATGAAAGTAAGTTTT GCAGTTATGGTCAATACCCAGCCGACCTAGCCCATAAAATACA TAGTGCAAATCATATGGATGATAATGATGGAGAA | 1589 |
| | TTCTCCATCATTATCATCCATATGATTTGCACTATGTATTTTAT GGGCTAGGTCGGCTGGGTATTGACCATAACTGCAAAACTTAC TTTCATCATCTTCAGAATAGGATTCAATCGAGGGT | 1590 |
| | GGTCAATACCCAGCCGA | 1591 |
| | TCGGCTGGGTATTGACC | 1592 |
| Adenomatous polyposis coli Glu1020Term GAA-TAA | TACCCAGCCGACCTAGCCCATAAAATACATAGTGCAAATCATA TGGATGATAATGATGGAGAACTAGATACACCAATAAATTATAG TCTTAAATATTCAGATGAGCAGTTGAACTCTGGAA | 1593 |
| | TTCCAGAGTTCAACTGCTCATCTGAATATTTAAGACTATAATTT ATTGGTGTATCTAGTTCTCCATCATTATCATCCATATGATTTGC ACTATGTATTTTATGGGCTAGGTCGGCTGGGTA | 1594 |
| | ATGATGGAGAACTAGAT | 1595 |
| | ATCTAGTTCTCCATCAT | 1596 |
| Adenomatous polyposis coli Ser1032Term TCA-TAA | ATGAAACCCTCGATTGAATCCTATTCTGAAGATGATGAAAGTA AGTTTTGCAGTTATGGTCAATACCCAGCCGACCTAGCCCATAA AATACATAGTGCAAATCATATGGATGATAATGATG | 1597 |
| | CATCATTATCATCCATATGATTTGCACTATGTATTTTATGGGCT AGGTCGGCTGGGTATTGACCATAACTGCAAAACTTACTTTCAT CATCTTCAGAATAGGATTCAATCGAGGGTTTCAT | 1598 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GTTATGGTCAATACCCA | 1599 |
| | TGGGTATTGACCATAAC | 1600 |
| Adenomatous polyposis coli Gln1041Term CAA-TAA | TGAAGATGATGAAAGTAAGTTTTGCAGTTATGGTCAATACCCA GCCGACCTAGCCCATAAAATACATAGTGCAAATCATATGGATG ATAATGATGGAGAACTAGATACACCAATAAATTAT | 1601 |
| | ATAATTTATTGGTGTATCTAGTTCTCCATCATTATCATCCATAT GATTTGCACTATGTATTTTATGGGCTAGGTCGGCTGGGTATTG ACCATAACTGCAAAACTTACTTTCATCATCTTCA | 1602 |
| | GCCCATAAAATACATAG | 1603 |
| | CTATGTATTTTATGGGC | 1604 |
| Adenomatous polyposis coli Gln1045Term CAG-TAG | ATAAATTATAGTCTTAAATATTCAGATGAGCAGTTGAACTCTGG AAGGCAAAGTCCTTCACAGAATGAAAGATGGGCAAGACCCAA ACACATAATAGAAGATGAAATAAAACAAAGTGAGC | 1605 |
| | GCTCACTTTGTTTTATTTCATCTTCTATTATGTGTTTGGGTCTT GCCCATCTTTCATTCTGTGAAGGACTTTGCCTTCCAGAGTTCA ACTGCTCATCTGAATATTTAAGACTATAATTTAT | 1606 |
| | GTCCTTCACAGAATGAA | 1607 |
| | TTCATTCTGTGAAGGAC | 1608 |
| Adenomatous polyposis coli Gln1067Term CAA-TAA | GAAAGATGGGCAAGACCCAAACACATAATAGAAGATGAAATAA AACAAAGTGAGCAAAGACAATCAAGGAATCAAAGTACAACTTA TCCTGTTTATACTGAGAGCACTGATGATAAACACC | 1609 |
| | GGTGTTTATCATCAGTGCTCTCAGTATAAACAGGATAAGTTGT ACTTTGATTCCTTGATTGTCTTTGCTCACTTTGTTTTATTTCATC TTCTATTATGTGTTTGGGTCTTGCCCATCTTTC | 1610 |
| | AGCAAAGACAATCAAGG | 1611 |
| | CCTTGATTGTCTTTGCT | 1612 |
| Adenomatous polyposis coli Tyr1075Term TAT-TAG | AATAGAAGATGAAATAAAACAAAGTGAGCAAAGACAATCAAGG AATCAAAGTACAACTTATCCTGTTTATACTGAGAGCACTGATG ATAAACACCTCAAGTTCCAACCACATTTTGGACAG | 1613 |
| | CTGTCCAAAATGTGGTTGGAACTTGAGGTGTTTATCATCAGTG CTCTCAGTATAAACAGGATAAGTTGTACTTTGATTCCTTGATTG TCTTTGCTCACTTTGTTTTATTTCATCTTCTATT | 1614 |
| | ACAACTTATCCTGTTTA | 1615 |
| | TAAACAGGATAAGTTGT | 1616 |
| Adenomatous polyposis coli Tyr1102Term TAC-TAG | TGATGATAAACACCTCAAGTTCCAACCACATTTTGGACAGCAG GAATGTGTTTCTCCATACAGGTCACGGGGAGCCAATGGTTCA GAAACAAATCGAGTGGGTTCTAATCATGGAATTAAT | 1617 |
| | ATTAATTCCATGATTAGAACCCACTCGATTTGTTTCTGAACCAT TGGCTCCCCGTGACCTGTATGGAGAAACACATTCCTGCTGTC CAAAATGTGGTTGGAACTTGAGGTGTTTATCATCA | 1618 |
| | TCTCCATACAGGTCACG | 1619 |
| | CGTGACCTGTATGGAGA | 1620 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Adenomatous polyposis coli Ser1110Term TCA-TGA | AACCACATTTTGGACAGCAGGAATGTGTTTCTCCATACAGGTC ACGGGGAGCCAATGGTT**C**AGAAACAAATCGAGTGGGTTCTAA TCATGGAATTAATCAAAATGTAAGCCAGTCTTTGTG | 1621 |
| | CACAAAGACTGGCTTACATTTTGATTAATTCCATGATTAGAACC CACTCGATTTGTTTCT**G**AACCATTGGCTCCCCGTGACCTGTAT GGAGAAACACATTCCTGCTGTCCAAAATGTGGTT | 1622 |
| | CAATGGTT**C**AGAAACAA | 1623 |
| | TTGTTTCT**G**AACCATTG | 1624 |
| Adenomatous polyposis coli Arg1114Term CGA-TGA | GGACAGCAGGAATGTGTTTCTCCATACAGGTCACGGGGAGCC AATGGTTCAGAAACAAAT**C**GAGTGGGTTCTAATCATGGAATTA ATCAAAATGTAAGCCAGTCTTTGTGTCAAGAAGATG | 1625 |
| | CATCTTCTTGACACAAAGACTGGCTTACATTTTGATTAATTCCA TGATTAGAACCCACTC**G**ATTTGTTTCTGAACCATTGGCTCCCC GTGACCTGTATGGAGAAACACATTCCTGCTGTCC | 1626 |
| | AAACAAAT**C**GAGTGGGT | 1627 |
| | ACCCACTC**G**ATTTGTTT | 1628 |
| Adenomatous polyposis coli Tyr1135Term TAT-TAG | GGGTTCTAATCATGGAATTAATCAAAATGTAAGCCAGTCTTTG TGTCAAGAAGATGACTA**T**GAAGATGATAAGCCTACCAATTATA GTGAACGTTACTCTGAAGAAGAACAGCATGAAGAA | 1629 |
| | TTCTTCATGCTGTTCTTCTTCAGAGTAACGTTCACTATAATTGG TAGGCTTATCATCTTC**A**TAGTCATCTTCTTGACACAAAGACTG GCTTACATTTTGATTAATTCCATGATTAGAACCC | 1630 |
| | GATGACTA**T**GAAGATGA | 1631 |
| | TCATCTTC**A**TAGTCATC | 1632 |
| Adenomatous polyposis coli Gln1152Term CAG-TAG | GAAGATGACTATGAAGATGATAAGCCTACCAATTATAGTGAAC GTTACTCTGAAGAAGAA**C**AGCATGAAGAAGAAGAGAGACCAA CAAATTATAGCATAAAATATAATGAAGAGAAACGTC | 1633 |
| | GACGTTTCTCTTCATTATATTTTATGCTATAATTTGTTGGTCTCT CTTCTTCTTCATGCT**G**TTCTTCTTCAGAGTAACGTTCACTATAA TTGGTAGGCTTATCATCTTCATAGTCATCTTC | 1634 |
| | AAGAAGAA**C**AGCATGAA | 1635 |
| | TTCATGCT**G**TTCTTCTT | 1636 |
| Adenomatous polyposis coli Gln1175Term CAG-TAG | GAAGAAGAGAGACCAACAAATTATAGCATAAAATATAATGAAG AGAAACGTCATGTGGAT**C**AGCCTATTGATTATAGTTTAAAATAT GCCACAGATATTCCTTCATCACAGAAACAGTCAT | 1637 |
| | ATGACTGTTTCTGTGATGAAGGAATATCTGTGGCATATTTTAAA CTATAATCAATAGGCT**G**ATCCACATGACGTTTCTCTTCATTATA TTTTATGCTATAATTTGTTGGTCTCTCTTCTTC | 1638 |
| | ATGTGGAT**C**AGCCTATT | 1639 |
| | AATAGGCT**G**ATCCACAT | 1640 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Adenomatous polyposis coli Pro1176Leu CCT-CTT | AAGAGAGACCAACAAATTATAGCATAAAATATAATGAAGAGAA ACGTCATGTGGATCAGC**C**TATTGATTATAGTTTAAAATATGCCA CAGATATTCCTTCATCACAGAAACAGTCATTTTC | 1641 |
| | GAAAATGACTGTTTCTGTGATGAAGGAATATCTGTGGCATATT TTAAACTATAATCAATA**G**GCTGATCCACATGACGTTTCTCTTCA TTATATTTTATGCTATAATTTGTTGGTCTCTCTT | 1642 |
| | GGATCAGC**C**TATTGATT | 1643 |
| | AATCAATA**G**GCTGATCC | 1644 |
| Adenomatous polyposis coli Ala1184Pro GCC-CCC | ATAAAATATAATGAAGAGAAACGTCATGTGGATCAGCCTATTG ATTATAGTTTAAAATAT**G**CCACAGATATTCCTTCATCACAGAAA CAGTCATTTTCATTCTCAAAGAGTTCATCTGGAC | 1645 |
| | GTCCAGATGAACTCTTTGAGAATGAAAATGACTGTTTCTGTGA TGAAGGAATATCTGTGG**C**ATATTTTAAACTATAATCAATAGGCT GATCCACATGACGTTTCTCTTCATTATATTTTAT | 1646 |
| | TAAAATAT**G**CCACAGAT | 1647 |
| | ATCTGTGG**C**ATATTTTA | 1648 |
| Adenomatous polyposis coli Ser1194Term TCA-TGA | ATCAGCCTATTGATTATAGTTTAAAATATGCCACAGATATTCCT TCATCACAGAAACAGT**C**ATTTTCATTCTCAAAGAGTTCATCTG GACAAAGCAGTAAAACCGAACATATGTCTTCAAG | 1649 |
| | CTTGAAGACATATGTTCGGTTTTACTGCTTTGTCCAGATGAAC TCTTTGAGAATGAAAAT**G**ACTGTTTCTGTGATGAAGGAATATCT GTGGCATATTTTAAACTATAATCAATAGGCTGAT | 1650 |
| | GAAACAGT**C**ATTTTCAT | 1651 |
| | ATGAAAAT**G**ACTGTTTC | 1652 |
| Adenomatous polyposis coli Ser1198Term TCA-TGA | ATTATAGTTTAAAATATGCCACAGATATTCCTTCATCACAGAAA CAGTCATTTTCATTCT**C**AAAGAGTTCATCTGGACAAAGCAGTA AAACCGAACATATGTCTTCAAGCAGTGAGAATAC | 1653 |
| | GTATTCTCACTGCTTGAAGACATATGTTCGGTTTTACTGCTTTG TCCAGATGAACTCTTT**G**AGAATGAAAATGACTGTTTCTGTGAT GAAGGAATATCTGTGGCATATTTTAAACTATAAT | 1654 |
| | TTCATTCT**C**AAAGAGTT | 1655 |
| | AACTCTTT**G**AGAATGAA | 1656 |
| Adenomatous polyposis coli Gln1228Term CAG-TAG | ACCGAACATATGTCTTCAAGCAGTGAGAATACGTCCACACCTT CATCTAATGCCAAGAGG**C**AGAATCAGCTCCATCCAGTTCTGC ACAGAGTAGAAGTGGTCAGCCTCAAAGGCTGCCACT | 1657 |
| | AGTGGCAGCCTTTGAGGCTGACCACTTCTACTCTGTGCAGAA CTGGATGGAGCTGATTCT**G**CCTCTTGGCATTAGATGAAGGTG TGGACGTATTCTCACTGCTTGAAGACATATGTTCGGT | 1658 |
| | CCAAGAGG**C**AGAATCAG | 1659 |
| | CTGATTCT**G**CCTCTTGG | 1660 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Adenomatous polyposis coli Gln1230Term CAG-TAG | CATATGTCTTCAAGCAGTGAGAATACGTCCACACCTTCATCTA ATGCCAAGAGGCAGAATCAGCTCCATCCAGTTCTGCACAGAG TAGAAGTGGTCAGCCTCAAAGGCTGCCACTTGCAAG | 1661 |
| | CTTGCAAGTGGCAGCCTTTGAGGCTGACCACTTCTACTCTGT GCAGAACTGGATGGAGCTGATTCTGCCTCTTGGCATTAGATG AAGGTGTGGACGTATTCTCACTGCTTGAAGACATATG | 1662 |
| | GGCAGAATCAGCTCCAT | 1663 |
| | ATGGAGCTGATTCTGCC | 1664 |
| Adenomatous polyposis coli Cys1249Term TGC-TGA | TCAGCTCCATCCAAGTTCTGCACAGAGTAGAAGTGGTCAGCC TCAAAAGGCTGCCACTTGCAAAGTTTCTTCTATTAACCAAGAA ACAATACAGACTTATTGTGTAGAAGATACTCCAATA | 1665 |
| | TATTGGAGTATCTTCTACACAATAAGTCTGTATTGTTTCTTGGT TAATAGAAGAAACTTTGCAAGTGGCAGCCTTTTGAGGCTGACC ACTTCTACTCTGTGCAGAACTTGGATGGAGCTGA | 1666 |
| | GCCACTTGCAAAGTTTC | 1667 |
| | GAAACTTTGCAAGTGGC | 1668 |
| Adenomatous polyposis coli Cys1270Term TGT-TGA | AGTTTCTTCTATTAACCAAGAAACAATACAGACTTATTGTGTAG AAGATACTCCAATATGTTTTTCAAGATGTAGTTCATTATCATCT TTGTCATCAGCTGAAGATGAAATAGGATGTAAT | 1669 |
| | ATTACATCCTATTTCATCTTCAGCTGATGACAAAGATGATAATG AACTACATCTTGAAAAACATATTGGAGTATCTTCTACACAATAA GTCTGTATTGTTTCTTGGTTAATAGAAGAAACT | 1670 |
| | CCAATATGTTTTTCAAG | 1671 |
| | CTTGAAAAACATATTGG | 1672 |
| Adenomatous polyposis coli Ser1276Term TCA-TGA | AAGAAACAATACAGACTTATTGTGTAGAAGATACTCCAATATGT TTTTCAAGATGTAGTTCATTATCATCTTTGTCATCAGCTGAAGA TGAAATAGGATGTAATCAGACGACACAGGAAGC | 1673 |
| | GCTTCCTGTGTCGTCTGATTACATCCTATTTCATCTTCAGCTG ATGACAAAGATGATAATGAACTACATCTTGAAAAACATATTGGA GTATCTTCTACACAATAAGTCTGTATTGTTTCTT | 1674 |
| | ATGTAGTTCATTATCAT | 1675 |
| | ATGATAATGAACTACAT | 1676 |
| Adenomatous polyposis coli Glu1286Term GAA-TAA | GATACTCCAATATGTTTTTCAAGATGTAGTTCATTATCATCTTT GTCATCAGCTGAAGATGAAATAGGATGTAATCAGACGACACA GGAAGCAGATTCTGCTAATACCCTGCAAATAGCAG | 1677 |
| | CTGCTATTTGCAGGGTATTAGCAGAATCTGCTTCCTGTGTCGT CTGATTACATCCTATTTCATCTTCAGCTGATGACAAAGATGATA ATGAACTACATCTTGAAAAACATATTGGAGTATC | 1678 |
| | CTGAAGATGAAATAGGA | 1679 |
| | TCCTATTTCATCTTCAG | 1680 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Adenomatous polyposis coli<br>Gln1294Term<br>CAG-TAG | TGTAGTTCATTATCATCTTTGTCATCAGCTGAAGATGAAATAGG<br>ATGTAATCAGACGACA**C**AGGAAGCAGATTCTGCTAATACCCTG<br>CAAATAGCAGAAATAAAAGAAAAGATTGGAACTA | 1681 |
| | TAGTTCCAATCTTTTCTTTTATTTCTGCTATTTGCAGGGTATTA<br>GCAGAATCTGCTTCCT**G**TGTCGTCTGATTACATCCTATTTCAT<br>CTTCAGCTGATGACAAAGATGATAATGAACTACA | 1682 |
| | AGACGACA**C**AGGAAGCA | 1683 |
| | TGCTTCCT**G**TGTCGTCT | 1684 |
| Predisposition to, association with, colorectal cancer<br>Ile1307Lys<br>ATA-AAA | TAGGATGTAATCAGACGACACAGGAAGCAGATTCTGCTAATAC<br>CCTGCAAATAGCAGAAA**T**AAAAGAAAAGATTGGAACTAGGTCA<br>GCTGAAGATCCTGTGAGCGAAGTTCCAGCAGTGTC | 1685 |
| | GACACTGCTGGAACTTCGCTCACAGGATCTTCAGCTGACCTA<br>GTTCCAATCTTTTCTTTT**A**TTTCTGCTATTTGCAGGGTATTAGC<br>AGAATCTGCTTCCTGTGTCGTCTGATTACATCCTA | 1686 |
| | AGCAGAAA**T**AAAAGAAA | 1687 |
| | TTTCTTTT**A**TTTCTGCT | 1688 |
| Adenomatous polyposis coli<br>Glu1309Term<br>GAA-TAA | CCAAGAAACAATACAGACTTATTGTGTAGAAGATACTCCAATA<br>TGTTTTTCAAGATGTAG**T**TCATTATCATCTTTGTCATCAGCTGA<br>AGATGAAATAGGATGTAATCAGACGACACAGGAA | 1689 |
| | TTCCTGTGTCGTCTGATTACATCCTATTTCATCTTCAGCTGATG<br>ACAAAGATGATAATGA**A**CTACATCTTGAAAAACATATTGGAGTA<br>TCTTCTACACAATAAGTCTGTATTGTTTCTTGG | 1690 |
| | AGATGTAG**T**TCATTATC | 1691 |
| | GATAATGA**A**CTACATCT | 1692 |
| Predisposition to Colorectal Cancer<br>Glu1317Gln<br>GAA-CAA | GATTCTGCTAATACCCTGCAAATAGCAGAAATAAAAGAAAAGA<br>TTGGAACTAGGTCAGCT**G**AAGATCCTGTGAGCGAAGTTCCAG<br>CAGTGTCACAGCACCCTAGAACCAAATCCAGCAGAC | 1693 |
| | GTCTGCTGGATTTGGTTCTAGGGTGCTGTGACACTGCTGGAA<br>CTTCGCTCACAGGATCTT**C**AGCTGACCTAGTTCCAATCTTTTC<br>TTTTATTTCTGCTATTTGCAGGGTATTAGCAGAATC | 1694 |
| | GGTCAGCT**G**AAGATCCT | 1695 |
| | AGGATCTT**C**AGCTGACC | 1696 |
| Adenomatous polyposis coli<br>Gln1328Term<br>CAG-TAG | AAAGAAAAGATTGGAACTAGGTCAGCTGAAGATCCTGTGAGC<br>GAAGTTCCAGCAGTGTCA**C**AGCACCCTAGAACCAAATCCAGC<br>AGACTGCAGGGTTCTAGTTTATCTTCAGAATCAGCCA | 1697 |
| | TGGCTGATTCTGAAGATAAACTAGAACCCTGCAGTCTGCTGG<br>ATTTGGTTCTAGGGTGCT**G**TGACACTGCTGGAACTTCGCTCA<br>CAGGATCTTCAGCTGACCTAGTTCCAATCTTTTCTTT | 1698 |
| | CAGTGTCA**C**AGCACCCT | 1699 |
| | AGGGTGCT**G**TGACACTG | 1700 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Adenomatous polyposis coli Gln1338Term CAG-TAG | GATCCTGTGAGCGAAGTTCCAGCAGTGTCACAGCACCCTAGA ACCAAATCCAGCAGACTGCAGGGTTCTAGTTTATCTTCAGAAT CAGCCAGGCACAAAGCTGTTGAATTTTCTTCAGGAG | 1701 |
| | CTCCTGAAGAAAATTCAACAGCTTTGTGCCTGGCTGATTCTGA AGATAAACTAGAACCCTGCAGTCTGCTGGATTTGGTTCTAGG GTGCTGTGACACTGCTGGAACTTCGCTCACAGGATC | 1702 |
| | GCAGACTGCAGGGTTCT | 1703 |
| | AGAACCCTGCAGTCTGC | 1704 |
| Adenomatous polyposis coli Leu1342Term TTA-TAA | AAGTTCCAGCAGTGTCACAGCACCCTAGAACCAAATCCAGCA GACTGCAGGGTTCTAGTTTATCTTCAGAATCAGCCAGGCACAA AGCTGTTGAATTTTCTTCAGGAGCGAAATCTCCCTC | 1705 |
| | GAGGGAGATTTCGCTCCTGAAGAAAATTCAACAGCTTTGTGC CTGGCTGATTCTGAAGATAAACTAGAACCCTGCAGTCTGCTG GATTTGGTTCTAGGGTGCTGTGACACTGCTGGAACTT | 1706 |
| | TTCTAGTTTATCTTCAG | 1707 |
| | CTGAAGATAAACTAGAA | 1708 |
| Adenomatous polyposis coli Arg1348Trp AGG-TGG | CAGCACCCTAGAACCAAATCCAGCAGACTGCAGGGTTCTAGT TTATCTTCAGAATCAGCCAGGCACAAAGCTGTTGAATTTTCTT CAGGAGCGAAATCTCCCTCCCGAAAGTGGTGCTCAG | 1709 |
| | CTGAGCACCACTTTCGGGAGGGAGATTTCGCTCCTGAAGAAA ATTCAACAGCTTTGTGCCTGGCTGATTCTGAAGATAAACTAGA ACCCTGCAGTCTGCTGGATTTGGTTCTAGGGTGCTG | 1710 |
| | AATCAGCCAGGCACAAA | 1711 |
| | TTTGTGCCTGGCTGATT | 1712 |
| Adenomatous polyposis coli Gly1357Term GGA-TGA | CTGCAGGGTTCTAGTTTATCTTCAGAATCAGCCAGGCACAAAG CTGTTGAATTTTCTTCAGGAGCGAAATCTCCCTCCCGAAAGTG GTGCTCAGACACCCCAAAGTCCACCTGAACACTAT | 1713 |
| | ATAGTGTTCAGGTGGACTTTGGGGTGTCTGAGCACCACTTTC GGGAGGGAGATTTCGCTCCTGAAGAAAATTCAACAGCTTTGT GCCTGGCTGATTCTGAAGATAAACTAGAACCCTGCAG | 1714 |
| | TTTCTTCAGGAGCGAAA | 1715 |
| | TTTCGCTCCTGAAGAAA | 1716 |
| Adenomatous polyposis coli Gln1367Term CAG-TAG | CCAGGCACAAAGCTGTTGAATTTTCTTCAGGAGCGAAATCTCC CTCCCGAAAGTGGTGCTCAGACACCCCAAAGTCCACCTGAAC ACTATGTTCAGGAGACCCCACTCATGTTTAGCAGAT | 1717 |
| | ATCTGCTAAACATGAGTGGGGTCTCCTGAACATAGTGTTCAG GTGGACTTTGGGGTGTCTGAGCACCACTTTCGGGAGGGAGAT TTCGCTCCTGAAGAAAATTCAACAGCTTTGTGCCTGG | 1718 |
| | GTGGTGCTCAGACACCC | 1719 |
| | GGGTGTCTGAGCACCAC | 1720 |

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|---|---|---|
| Adenomatous polyposis coli Lys1370Term AAA-TAA | AAAGCTGTTGAATTTTCTTCAGGAGCGAAATCTCCCTCCAAAA GTGGTGCTCAGACACCCAAAAGTCCACCTGAACACTATGTTC AGGAGACCCCACTCATGTTTAGCAGATGTACTTCTG | 1721 |
| | CAGAAGTACATCTGCTAAACATGAGTGGGGTCTCCTGAACATA GTGTTCAGGTGGACTTTTGGGTGTCTGAGCACCACTTTTGGA GGGAGATTTCGCTCCTGAAGAAAATTCAACAGCTTT | 1722 |
| | AGACACCCAAAAGTCCA | 1723 |
| | TGGACTTTTGGGTGTCT | 1724 |
| Adenomatous polyposis coli Ser1392Term TCA-TAA | CACCTGAACACTATGTTCAGGAGACCCCACTCATGTTTAGCA GATGTACTTCTGTCAGTTCACTTGATAGTTTTGAGAGTCGTTC GATTGCCAGCTCCGTTCAGAGTGAACCATGCAGTGG | 1725 |
| | CCACTGCATGGTTCACTCTGAACGGAGCTGGCAATCGAACGA CTCTCAAAACTATCAAGTGAACTGACAGAAGTACATCTGCTAA ACATGAGTGGGGTCTCCTGAACATAGTGTTCAGGTG | 1726 |
| | TGTCAGTTCACTTGATA | 1727 |
| | TATCAAGTGAACTGACA | 1728 |
| Adenomatous polyposis coli Ser1392Term TCA-TGA | CACCTGAACACTATGTTCAGGAGACCCCACTCATGTTTAGCA GATGTACTTCTGTCAGTTCACTTGATAGTTTTGAGAGTCGTTC GATTGCCAGCTCCGTTCAGAGTGAACCATGCAGTGG | 1729 |
| | CCACTGCATGGTTCACTCTGAACGGAGCTGGCAATCGAACGA CTCTCAAAACTATCAAGTGAACTGACAGAAGTACATCTGCTAA ACATGAGTGGGGTCTCCTGAACATAGTGTTCAGGTG | 1730 |
| | TGTCAGTTCACTTGATA | 1731 |
| | TATCAAGTGAACTGACA | 1732 |
| Adenomatous polyposis coli Glu1397Term GAG-TAG | GTTCAGGAGACCCCACTCATGTTTAGCAGATGTACTTCTGTCA GTTCACTTGATAGTTTTGAGAGTCGTTCGATTGCCAGCTCCGT TCAGAGTGAACCATGCAGTGGAATGGTAGGTGGCA | 1733 |
| | TGCCACCTACCATTCCACTGCATGGTTCACTCTGAACGGAGC TGGCAATCGAACGACTCTCAAAACTATCAAGTGAACTGACAGA AGTACATCTGCTAAACATGAGTGGGGTCTCCTGAAC | 1734 |
| | ATAGTTTTGAGAGTCGT | 1735 |
| | ACGACTCTCAAAACTAT | 1736 |
| Adenomatous polyposis coli Lys1449Term AAG-TAG | CAAACCATGCCACCAAGCAGAAGTAAAACACCTCCACCACCT CCTCAAACAGCTCAAACCAAGCGAGAAGTACCTAAAAATAAAG CACCTACTGCTGAAAAGAGAGAGAGTGGACCTAAGC | 1737 |
| | GCTTAGGTCCACTCTCTCTCTTTTCAGCAGTAGGTGCTTTATT TTTAGGTACTTCTCGCTTGGTTTGAGCTGTTTGAGGAGGTGGT GGAGGTGTTTTACTTCTGCTTGGTGGCATGGTTTG | 1738 |
| | CTCAAACCAAGCGAGAA | 1739 |
| | TTCTCGCTTGGTTTGAG | 1740 |
| Adenomatous polyposis coli Arg1450Term CGA-TGA | ACCATGCCACCAAGCAGAAGTAAAACACCTCCACCACCTCCT CAAACAGCTCAAACCAAGCGAGAAGTACCTAAAAATAAAGCAC CTACTGCTGAAAAGAGAGAGAGTGGACCTAAGCAAG | 1741 |

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|---|---|---|
| | CTTGCTTAGGTCCACTCTCTCTCTTTTCAGCAGTAGGTGCTTT ATTTTTAGGTACTTCTCGCTTGGTTTGAGCTGTTTGAGGAGGT GGTGGAGGTGTTTTACTTCTGCTTGGTGGCATGGT | 1742 |
| | AAACCAAGCGAGAAGTA | 1743 |
| | TACTTCTCGCTTGGTTT | 1744 |
| Adenomatous polyposis coli Ser1503Term TCA-TAA | CAGATGCTGATACTTTATTACATTTTGCCACGGAAAGTACTCC AGATGGATTTTCTTGTTCATCCAGCCTGAGTGCTCTGAGCCTC GATGAGCCATTTATACAGAAAGATGTGGAATTAAG | 1745 |
| | CTTAATTCCACATCTTTCTGTATAAATGGCTCATCGAGGCTCA GAGCACTCAGGCTGGATGAACAAGAAAATCCATCTGGAGTAC TTTCCGTGGCAAAATGTAATAAAGTATCAGCATCTG | 1746 |
| | TTCTTGTTCATCCAGCC | 1747 |
| | GGCTGGATGAACAAGAA | 1748 |
| Adenomatous polyposis coli Gln1529Term CAG-TAG | CTGAGCCTCGATGAGCCATTTATACAGAAAGATGTGGAATTAA GAATAATGCCTCCAGTTCAGGAAAATGACAATGGGAATGAAAC AGAATCAGAGCAGCCTAAAGAATCAAATGAAAACC | 1749 |
| | GGTTTTCATTTGATTCTTTAGGCTGCTCTGATTCTGTTTCATTC CCATTGTCATTTTCCTGAACTGGAGGCATTATTCTTAATTCCAC ATCTTTCTGTATAAATGGCTCATCGAGGCTCAG | 1750 |
| | CTCCAGTTCAGGAAAAT | 1751 |
| | ATTTTCCTGAACTGGAG | 1752 |
| Adenomatous polyposis coli Ser1539Term TCA-TAA | ATGTGGAATTAAGAATAATGCCTCCAGTTCAGGAAAATGACAA TGGGAATGAAACAGAATCAGAGCAGCCTAAAGAATCAAATGAA AACCAAGAGAAAGAGGCAGAAAAAACTATTGATTC | 1753 |
| | GAATCAATAGTTTTTTCTGCCTCTTTCTCTTGGTTTTCATTTGA TTCTTTAGGCTGCTCTGATTCTGTTTCATTCCCATTGTCATTTT CCTGAACTGGAGGCATTATTCTTAATTCCACAT | 1754 |
| | AACAGAATCAGAGCAGC | 1755 |
| | GCTGCTCTGATTCTGTT | 1756 |
| Adenomatous polyposis coli Ser1567Term TCA-TGA | AAAACCAAGAGAAAGAGGCAGAAAAAACTATTGATTCTGAAAA GGACCTATTAGATGATTCAGATGATGATGATATTGAAATACTA GAAGAATGTATTATTTCTGCCATGCCAACAAAGTC | 1757 |
| | GACTTTGTTGGCATGGCAGAAATAATACATTCTTCTAGTATTTC AATATCATCATCATCTGAATCATCTAATAGGTCCTTTTCAGAAT CAATAGTTTTTTCTGCCTCTTTCTCTTGGTTTT | 1758 |
| | AGATGATTCAGATGATG | 1759 |
| | CATCATCTGAATCATCT | 1760 |
| Adenomatous polyposis coli Asp1822Val GAC-GTC | AGAGAGTTTTCTCAGACAACAAAGATTCAAAGAAACAGAATTT GAAAAATAATTCCAAGGACTTCAATGATAAGCTCCCAAATAAT GAAGATAGAGTCAGAGGAAGTTTTGCTTTTGATTC | 1761 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GAATCAAAAGCAAAACTTCCTCTGACTCTATCTTCATTATTTGG GAGCTTATCATTGAAGTCCTTGGAATTATTTTTCAAATTCTGTT TCTTTGAATCTTTGTTGTCTGAGAAAACTCTCT | 1762 |
| | TTCCAAGGACTTCAATG | 1763 |
| | CATTGAAGTCCTTGGAA | 1764 |
| Adenomatous polyposis coli Leu2839Phe CTT-TTT | AAAACTGACAGCACAGAATCCAGTGGAACCCAAAGTCCTAAG CGCCATTCTGGGTCTTACCTTGTGACATCTGTTTAAAAGAGAG GAAGAATGAAACTAAGAAAATTCTATGTTAATTACA | 1765 |
| | TGTAATTAACATAGAATTTTCTTAGTTTCATTCTTCCTCTCTTTT AAACAGATGTCACAAGGTAAGACCCAGAATGGCGCTTAGGAC TTTGGGTTCCACTGGATTCTGTGCTGTCAGTTTT | 1766 |
| | GGTCTTACCTTGTGACA | 1767 |
| | TGTCACAAGGTAAGACC | 1768 |

## EXAMPLE 12
## Parahemophilia - Factor V Deficiency

Deficiency in clotting Factor V is associated with a lifelong predisposition to thrombosis. The disease typically manifests itself with usually mild bleeding, although bleeding times and clotting times are consistently prolonged. Individuals that are heterozygous for a mutation in Factor V have lowered levels of factor V but probably never have abnormal bleeding. A large number of alleles with a range of presenting symptoms have been identified. The attached table discloses the correcting oligonucleotide base sequences for the Factor V oligonucleotides of the invention.

### Table 19
### Factor V Mutations and Genome-Correcting Oligos

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Factor V deficiency Ala221Val GCC-GTC | TTGACTGAATGCTTATTTTGGCCTGTGTCTCTCCCTCTTTCTCA GATATAACAGTTTGTGCCCATGACCACATCAGCTGGCATCTGC TGGGAATGAGCTCGGGGCCAGAATTATTCTCCAT | 1768 |
| | ATGGAGAATAATTCTGGCCCCGAGCTCATTCCCAGCAGATGC CAGCTGATGTGGTCATGGGCACAAACTGTTATATCTGAGAAAG AGGGAGAGACACAGGCCAAAATAAGCATTCAGTCAA | 1769 |
| | AGTTTGTGCCCATGACC | 1770 |
| | GGTCATGGGCACAAACT | 1771 |
| Thrombosis Arg306Gly AGG-GGG | TGTCCTAACTCAGCTGGGATGCAGGCTTACATTGACATTAAAA ACTGCCCAAAGAAAACCAGGAATCTTAAGAAAATAACTCGTGA GCAGAGGCGGCACATGAAGAGGTGGGAATACTTCA | 1772 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGAAGTATTCCCACCTCTTCATGTGCCGCCTCTGCTCACGAGT<br>TATTTTCTTAAGATTCCTGGTTTTCTTTGGGCAGTTTTTAATGT<br>CAATGTAAGCCTGCATCCCAGCTGAGTTAGGACA | 1773 |
| | AGAAAACCAGGAATCTT | 1774 |
| | AAGATTCCTGGTTTTCT | 1775 |
| Thrombosis<br>Arg306Thr<br>AGG-ACG | GTCCTAACTCAGCTGGGATGCAGGCTTACATTGACATTAAAAA<br>CTGCCCAAAGAAAACCAGGAATCTTAAGAAAATAACTCGTGAG<br>CAGAGGCGGCACATGAAGAGGTGGGAATACTTCAT | 1776 |
| | ATGAAGTATTCCCACCTCTTCATGTGCCGCCTCTGCTCACGA<br>GTTATTTTCTTAAGATTCCTGGTTTTCTTTGGGCAGTTTTTAAT<br>GTCAATGTAAGCCTGCATCCCAGCTGAGTTAGGAC | 1777 |
| | GAAAACCAGGAATCTTA | 1778 |
| | TAAGATTCCTGGTTTTC | 1779 |
| Increased Risk<br>Thrombosis<br>Arg485Lys<br>AGA-AAA | CCACAGAAAATGATGCCCAGTGCTTAACAAGACCATACTACAG<br>TGACGTGGACATCATGAGAGACATCGCCTCTGGGCTAATAGG<br>ACTACTTCTAATCTGTAAGAGCAGATCCCTGGACAG | 1780 |
| | CTGTCCAGGGATCTGCTCTTACAGATTAGAAGTAGTCCTATTA<br>GCCCAGAGGCGATGTCTCTCATGATGTCCACGTCACTGTAGT<br>ATGGTCTTGTTAAGCACTGGGCATCATTTTCTGTGG | 1781 |
| | CATCATGAGAGACATCG | 1782 |
| | CGATGTCTCTCATGATG | 1783 |
| Increased Risk<br>Thrombosis<br>Arg506Gln<br>CGA-CAA | ACATCGCCTCTGGGCTAATAGGACTACTTCTAATCTGTAAGAG<br>CAGATCCCTGGACAGGCGAGGAATACAGGTATTTTGTCCTTG<br>AAGTAACCTTTCAGAAATTCTGAGAATTTCTTCTGG | 1784 |
| | CCAGAAGAAATTCTCAGAATTTCTGAAAGGTTACTTCAAGGAC<br>AAAATACCTGTATTCCTCGCCTGTCCAGGGATCTGCTCTTACA<br>GATTAGAAGTAGTCCTATTAGCCCAGAGGCGATGT | 1785 |
| | GGACAGGCGAGGAATAC | 1786 |
| | GTATTCCTCGCCTGTCC | 1787 |
| Factor V Deficiency<br>Arg506Term<br>CGA-TGA | GACATCGCCTCTGGGCTAATAGGACTACTTCTAATCTGTAAGA<br>GCAGATCCCTGGACAGGCGAGGAATACAGGTATTTTGTCCTT<br>GAAGTAACCTTTCAGAAATTCTGAGAATTTCTTCTG | 1788 |
| | CAGAAGAAATTCTCAGAATTTCTGAAAGGTTACTTCAAGGACA<br>AAATACCTGTATTCCTCGCCTGTCCAGGGATCTGCTCTTACAG<br>ATTAGAAGTAGTCCTATTAGCCCAGAGGCGATGTC | 1789 |
| | TGGACAGGCGAGGAATA | 1790 |
| | TATTCCTCGCCTGTCCA | 1791 |
| Thrombosis<br>Arg712Term<br>CGA-TGA | AGTGATGCTGACTATGATTACCAGAACAGACTGGCTGCAGCA<br>TTAGGAATCAGGTCATTCCGAAACTCATCATTGAATCAGGAAG<br>AAGAAGAGTTCAATCTTACTGCCCTAGCTCTGGAGA | 1792 |
| | TCTCCAGAGCTAGGGCAGTAAGATTGAACTCTTCTTCTTCCTG<br>ATTCAATGATGAGTTTCGGAATGACCTGATTCCTAATGCTGCA<br>GCCAGTCTGTTCTGGTAATCATAGTCAGCATCACT | 1793 |
| | GGTCATTCCGAAACTCA | 1794 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGAGTTTCGGAATGACC | 1795 |
| Thrombosis<br>His1299Arg<br>CAT-CGT | TCAGTCAGACAAACCTTTCCCCAGCCCTCGGTCAGATGCCCA<br>TTTCTCCAGACCTCAGCCATACAACCCTTTCTCTAGACTTCAG<br>CCAGACAAACCTCTCTCCAGAACTCAGTCAAACAAA | 1796 |
| | TTTGTTTGACTGAGTTCTGGAGAGAGGTTTGTCTGGCTGAAGT<br>CTAGAGAAAGGGTTGTATGGCTGAGGTCTGGAGAAATGGGCA<br>TCTGACCGAGGGCTGGGGAAAGGTTTGTCTGACTGA | 1797 |
| | CCTCAGCCATACAACCC | 1798 |
| | GGGTTGTATGGCTGAGG | 1799 |

## EXAMPLE 13
## Hemophilia - Factor VIII Deficiency

The attached table discloses the correcting oligonucleotide base sequences for the Factor VIII oligonucleotides of the invention.

### Table 20
### Factor VIII Mutations and Genome-Correcting Oligos

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Haemophilia A<br>Tyr5Cys<br>TAC-TGC | AGCTCTCCACCTGCTTCTTTCTGTGCCTTTTGCGATTCTGCTT<br>TAGTGCCACCAGAAGATACTACCTGGGTGCAGTGGAACTGTC<br>ATGGGACTATATGCAAAGTGATCTCGGTGAGCTGCC | 1800 |
| | GGCAGCTCACCGAGATCACTTTGCATATAGTCCCATGACAGT<br>TCCACTGCACCCAGGTAGTATCTTCTGGTGGCACTAAAGCAG<br>AATCGCAAAAGGCACAGAAAGAAGCAGGTGGAGAGCT | 1801 |
| | CAGAAGATACTACCTGG | 1802 |
| | CCAGGTAGTATCTTCTG | 1803 |
| Haemophilia A<br>Leu7Arg<br>CTG-CGG | CCACCTGCTTCTTTCTGTGCCTTTTGCGATTCTGCTTTAGTGC<br>CACCAGAAGATACTACCTGGGTGCAGTGGAACTGTCATGGGA<br>CTATATGCAAAGTGATCTCGGTGAGCTGCCTGTGGA | 1804 |
| | TCCACAGGCAGCTCACCGAGATCACTTTGCATATAGTCCCAT<br>GACAGTTCCACTGCACCCAGGTAGTATCTTCTGGTGGCACTA<br>AAGCAGAATCGCAAAAGGCACAGAAAGAAGCAGGTGG | 1805 |
| | ATACTACCTGGGTGCAG | 1806 |
| | CTGCACCCAGGTAGTAT | 1807 |
| Haemophilia A<br>Ser(-1)Arg<br>AGTg-AGG | AGTCATGCAAATAGAGCTCTCCACCTGCTTCTTTCTGTGCCTT<br>TTGCGATTCTGCTTTAGTGCCACCAGAAGATACTACCTGGGT<br>GCAGTGGAACTGTCATGGGACTATATGCAAAGTGAT | 1808 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATCACTTTGCATATAGTCCCATGACAGTTCCACTGCACCCAG GTAGTATCTTCTGGTGGC**A**CTAAAGCAGAATCGCAAAAGGCA CAGAAAGAAGCAGGTGGAGAGCTCTATTTGCATGACT | 1809 |
| | TGCTTTAG**T**GCCACCAG | 1810 |
| | CTGGTGGC**A**CTAAAGCA | 1811 |
| Haemophilia A Arg(-5)Term gCGA-TGA | CATTTGTAGCAATAAGTCATGCAAATAGAGCTCTCCACCTGCT TCTTTCTGTGCCTTTTG**C**GATTCTGCTTTAGTGCCACCAGAAG ATACTACCTGGGTGCAGTGGAACTGTCATGGGACT | 1812 |
| | AGTCCCATGACAGTTCCACTGCACCCAGGTAGTATCTTCTGG TGGCACTAAAGCAGAATC**G**CAAAAGGCACAGAAAGAAGCAGG TGGAGAGCTCTATTTGCATGACTTATTGCTACAAATG | 1813 |
| | GCCTTTTG**C**GATTCTGC | 1814 |
| | GCAGAATC**G**CAAAAGGC | 1815 |
| Haemophilia A Glu11Val GAA-GTA | TTCTGTGCCTTTTGCGATTCTGCTTTAGTGCCACCAGAAGATA CTACCTGGGTGCAGTGG**A**ACTGTCATGGGACTATATGCAAAG TGATCTCGGTGAGCTGCCTGTGGACGCAAGGTAAAG | 1816 |
| | CTTTACCTTGCGTCCACAGGCAGCTCACCGAGATCACTTTGC ATATAGTCCCATGACAGT**T**CCACTGCACCCAGGTAGTATCTTC TGGTGGCACTAAAGCAGAATCGCAAAAGGCACAGAA | 1817 |
| | TGCAGTGG**A**ACTGTCAT | 1818 |
| | ATGACAGT**T**CCACTGCA | 1819 |
| Haemophilia A Trp14Gly aTGG-GGG | CTTTTGCGATTCTGCTTTAGTGCCACCAGAAGATACTACCTGG GTGCAGTGGAACTGTCA**T**GGGACTATATGCAAAGTGATCTCG GTGAGCTGCCTGTGGACGCAAGGTAAAGGCATGTCC | 1820 |
| | GGACATGCCTTTACCTTGCGTCCACAGGCAGCTCACCGAGAT CACTTTGCATATAGTCCC**A**TGACAGTTCCACTGCACCCAGGT AGTATCTTCTGGTGGCACTAAAGCAGAATCGCAAAAG | 1821 |
| | AACTGTCA**T**GGGACTAT | 1822 |
| | ATAGTCCC**A**TGACAGTT | 1823 |
| Haemophilia A Tyr46Term TACa-TAA | TTCACGCAGATTTCCTCCTAGAGTGCCAAAATCTTTTCCATTC AACACCTCAGTCGTGTA**C**AAAAAGACTCTGTTTGTAGAATTCA CGGATCACCTTTTCAACATCGCTAAGCCAAGGCCA | 1824 |
| | TGGCCTTGGCTTAGCGATGTTGAAAAGGTGATCCGTGAATTC TACAAACAGAGTCTTTTT**G**TACACGACTGAGGTGTTGAATGGA AAAGATTTTGGCACTCTAGGAGGAAATCTGCGTGAA | 1825 |
| | GTCGTGTA**C**AAAAAGAC | 1826 |
| | GTCTTTTT**G**TACACGAC | 1827 |
| Haemophilia A Asp56Glu GATc-GAA | ATCTTTTCCATTCAACACCTCAGTCGTGTACAAAAAGACTCTG TTTGTAGAATTCACGGA**T**CACCTTTTCAACATCGCTAAGCCAA GGCCACCCTGGATGGGTAATGAAAACAATGTTGAA | 1828 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTCAACATTGTTTTCATTACCCATCCAGGGTGGCCTTGGCTTA GCGATGTTGAAAAGGTGATCCGTGAATTCTACAAACAGAGTC TTTTTGTACACGACTGAGGTGTTGAATGGAAAAGAT | 1829 |
| | TTCACGGATCACCTTTT | 1830 |
| | AAAAGGTGATCCGTGAA | 1831 |
| Haemophilia A Gly73Val GGT-GTT | TTCTGGAGTACTATCCCCAAGTAACCTTTGGCGGACATCTCAT TCTTACAGGTCTGCTAGGTCCTACCATCCAGGCTGAGGTTTA TGATACAGTGGTCATTACACTTAAGAACATGGCTTC | 1832 |
| | GAAGCCATGTTCTTAAGTGTAATGACCACTGTATCATAAACCT CAGCCTGGATGGTAGGACCTAGCAGACCTGTAAGAATGAGAT GTCCGCCAAAGGTTACTTGGGGATAGTACTCCAGAA | 1833 |
| | TCTGCTAGGTCCTACCA | 1834 |
| | TGGTAGGACCTAGCAGA | 1835 |
| Haemophilia A Glu79Lys tGAG-AAG | CAAGTAACCTTTGGCGGACATCTCATTCTTACAGGTCTGCTAG GTCCTACCATCCAGGCTGAGGTTTATGATACAGTGGTCATTAC ACTTAAGAACATGGCTTCCCATCCTGTCAGTCTTC | 1836 |
| | GAAGACTGACAGGATGGGAAGCCATGTTCTTAAGTGTAATGA CCACTGTATCATAAACCTCAGCCTGGATGGTAGGACCTAGCA GACCTGTAAGAATGAGATGTCCGCCAAAGGTTACTTG | 1837 |
| | TCCAGGCTGAGGTTTAT | 1838 |
| | ATAAACCTCAGCCTGGA | 1839 |
| Haemophilia A Val80Asp GTT-GAT | TAACCTTTGGCGGACATCTCATTCTTACAGGTCTGCTAGGTCC TACCATCCAGGCTGAGGTTTATGATACAGTGGTCATTACACTT AAGAACATGGCTTCCCATCCTGTCAGTCTTCATGC | 1840 |
| | GCATGAAGACTGACAGGATGGGAAGCCATGTTCTTAAGTGTA ATGACCACTGTATCATAAACCTCAGCCTGGATGGTAGGACCT AGCAGACCTGTAAGAATGAGATGTCCGCCAAAGGTTA | 1841 |
| | GGCTGAGGTTTATGATA | 1842 |
| | TATCATAAACCTCAGCC | 1843 |
| Haemophilia A Asp82Val GAT-GTT | TTGGCGGACATCTCATTCTTACAGGTCTGCTAGGTCCTACCAT CCAGGCTGAGGTTTATGATACAGTGGTCATTACACTTAAGAAC ATGGCTTCCCATCCTGTCAGTCTTCATGCTGTTGG | 1844 |
| | CCAACAGCATGAAGACTGACAGGATGGGAAGCCATGTTCTTA AGTGTAATGACCACTGTATCATAAACCTCAGCCTGGATGGTA GGACCTAGCAGACCTGTAAGAATGAGATGTCCGCCAA | 1845 |
| | GGTTTATGATACAGTGG | 1846 |
| | CCACTGTATCATAAACC | 1847 |
| Haemophilia A Asp82Gly GAT-GGT | TTGGCGGACATCTCATTCTTACAGGTCTGCTAGGTCCTACCAT CCAGGCTGAGGTTTATGATACAGTGGTCATTACACTTAAGAAC ATGGCTTCCCATCCTGTCAGTCTTCATGCTGTTGG | 1848 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCAACAGCATGAAGACTGACAGGATGGGAAGCCATGTTCTTA AGTGTAATGACCACTGTATCATAAACCTCAGCCTGGATGGTA GGACCTAGCAGACCTGTAAGAATGAGATGTCCGCCAA | 1849 |
| | GGTTTATGATACAGTGG | 1850 |
| | CCACTGTATCATAAACC | 1851 |
| Haemophilia A Val85Asp GTC-GAC | ATCTCATTCTTACAGGTCTGCTAGGTCCTACCATCCAGGCTGA GGTTTATGATACAGTGGTCATTACACTTAAGAACATGGCTTCC CATCCTGTCAGTCTTCATGCTGTTGGTGTATCCTA | 1852 |
| | TAGGATACACCAACAGCATGAAGACTGACAGGATGGGAAGCC ATGTTCTTAAGTGTAATGACCACTGTATCATAAACCTCAGCCT GGATGGTAGGACCTAGCAGACCTGTAAGAATGAGAT | 1853 |
| | TACAGTGGTCATTACAC | 1854 |
| | GTGTAATGACCACTGTA | 1855 |
| Haemophilia A Lys89Thr AAG-ACG | CAGGTCTGCTAGGTCCTACCATCCAGGCTGAGGTTTATGATA CAGTGGTCATTACACTTAAGAACATGGCTTCCCATCCTGTCA GTCTTCATGCTGTTGGTGTATCCTACTGGAAAGCTTC | 1856 |
| | GAAGCTTTCCAGTAGGATACACCAACAGCATGAAGACTGACA GGATGGGAAGCCATGTTCTTAAGTGTAATGACCACTGTATCAT AAACCTCAGCCTGGATGGTAGGACCTAGCAGACCTG | 1857 |
| | TACACTTAAGAACATGG | 1858 |
| | CCATGTTCTTAAGTGTA | 1859 |
| Haemophilia A Met91Val cATG-GTG | CTGCTAGGTCCTACCATCCAGGCTGAGGTTTATGATACAGTG GTCATTACACTTAAGAACATGGCTTCCCATCCTGTCAGTCTTC ATGCTGTTGGTGTATCCTACTGGAAAGCTTCTGAGG | 1860 |
| | CCTCAGAAGCTTTCCAGTAGGATACACCAACAGCATGAAGAC TGACAGGATGGGAAGCCATGTTCTTAAGTGTAATGACCACTG TATCATAAACCTCAGCCTGGATGGTAGGACCTAGCAG | 1861 |
| | TTAAGAACATGGCTTCC | 1862 |
| | GGAAGCCATGTTCTTAA | 1863 |
| Haemophilia A His94Arg CAT-CGT | CTACCATCCAGGCTGAGGTTTATGATACAGTGGTCATTACACT TAAGAACATGGCTTCCCATCCTGTCAGTCTTCATGCTGTTGGT GTATCCTACTGGAAAGCTTCTGAGGGTGAGTAAAA | 1864 |
| | TTTTACTCACCCTCAGAAGCTTTCCAGTAGGATACACCAACAG CATGAAGACTGACAGGATGGGAAGCCATGTTCTTAAGTGTAA TGACCACTGTATCATAAACCTCAGCCTGGATGGTAG | 1865 |
| | GGCTTCCCATCCTGTCA | 1866 |
| | TGACAGGATGGGAAGCC | 1867 |
| Haemophilia A His94Tyr cCAT-TAT | CCTACCATCCAGGCTGAGGTTTATGATACAGTGGTCATTACAC TTAAGAACATGGCTTCCCATCCTGTCAGTCTTCATGCTGTTGG TGTATCCTACTGGAAAGCTTCTGAGGGTGAGTAAA | 1868 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTTACTCACCCTCAGAAGCTTTCCAGTAGGATACACCAACAGC ATGAAGACTGACAGGATGGGAAGCCATGTTCTTAAGTGTAAT GACCACTGTATCATAAACCTCAGCCTGGATGGTAGG | 1869 |
| | TGGCTTCCCATCCTGTC | 1870 |
| | GACAGGATGGGAAGCCA | 1871 |
| Haemophilia A Leu98Arg CTT-CGT | CTGAGGTTTATGATACAGTGGTCATTACACTTAAGAACATGGC TTCCCATCCTGTCAGTCTTCATGCTGTTGGTGTATCCTACTGG AAAGCTTCTGAGGGTGAGTAAAATACCCTCCTATT | 1872 |
| | AATAGGAGGGTATTTTACTCACCCTCAGAAGCTTTCCAGTAGG ATACACCAACAGCATGAAGACTGACAGGATGGGAAGCCATGT TCTTAAGTGTAATGACCACTGTATCATAAACCTCAG | 1873 |
| | TGTCAGTCTTCATGCTG | 1874 |
| | CAGCATGAAGACTGACA | 1875 |
| Haemophilia A Gly102Ser tGGT-AGT | GATACAGTGGTCATTACACTTAAGAACATGGCTTCCCATCCTG TCAGTCTTCATGCTGTTGGTGTATCCTACTGGAAAGCTTCTGA GGGTGAGTAAAATACCCTCCTATTGTCCTGTCATT | 1876 |
| | AATGACAGGACAATAGGAGGGTATTTTACTCACCCTCAGAAG CTTTCCAGTAGGATACACCAACAGCATGAAGACTGACAGGAT GGGAAGCCATGTTCTTAAGTGTAATGACCACTGTATC | 1877 |
| | ATGCTGTTGGTGTATCC | 1878 |
| | GGATACACCAACAGCAT | 1879 |
| Haemophilia A Glu113Asp GAAt-GAC | CTTTGAGTGTACAGTGGATATAGAAAGGACAATTTTATTTCTTC CTGCTATAGGAGCTGAATATGATGATCAGACCAGTCAAAGGG AGAAAGAAGATGATAAAGTCTTCCCTGGTGGAAGC | 1880 |
| | GCTTCCACCAGGGAAGACTTTATCATCTTCTTTCTCCCTTTGA CTGGTCTGATCATCATATTCAGCTCCTATAGCAGGAAGAAATA AAATTGTCCTTTCTATATCCACTGTACACTCAAAG | 1881 |
| | GGAGCTGAATATGATGA | 1882 |
| | TCATCATATTCAGCTCC | 1883 |
| Haemophilia A Tyr114Cys TAT-TGT | TTGAGTGTACAGTGGATATAGAAAGGACAATTTTATTTCTTCCT GCTATAGGAGCTGAATATGATGATCAGACCAGTCAAAGGGAG AAAGAAGATGATAAAGTCTTCCCTGGTGGAAGCCA | 1884 |
| | TGGCTTCCACCAGGGAAGACTTTATCATCTTCTTTCTCCCTTT GACTGGTCTGATCATCATATTCAGCTCCTATAGCAGGAAGAAA TAAAATTGTCCTTTCTATATCCACTGTACACTCAA | 1885 |
| | AGCTGAATATGATGATC | 1886 |
| | GATCATCATATTCAGCT | 1887 |
| Haemophilia A Asp116Gly GAT-GGT | GTACAGTGGATATAGAAAGGACAATTTTATTTCTTCCTGCTATA GGAGCTGAATATGATGATCAGACCAGTCAAAGGGAGAAAGAA GATGATAAAGTCTTCCCTGGTGGAAGCCATACATA | 1888 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TATGTATGGCTTCCACCAGGGAAGACTTTATCATCTTCTTTCT CCCTTTGACTGGTCTGA**T**CATCATATTCAGCTCCTATAGCAGG AAGAAATAAAATTGTCCTTTCTATATCCACTGTAC | 1889 |
| | ATATGATG**A**TCAGACCA | 1890 |
| | TGGTCTGA**T**CATCATAT | 1891 |
| Haemophilia A Gln117Term tCAG-TAG | ACAGTGGATATAGAAAGGACAATTTTATTTCTTCCTGCTATAG GAGCTGAATATGATGAT**C**AGACCAGTCAAAGGGAGAAAGAAG ATGATAAAGTCTTCCCTGGTGGAAGCCATACATATG | 1892 |
| | CATATGTATGGCTTCCACCAGGGAAGACTTTATCATCTTCTTT CTCCCTTTGACTGGTCT**G**ATCATCATATTCAGCTCCTATAGCA GGAAGAAATAAAATTGTCCTTTCTATATCCACTGT | 1893 |
| | ATGATGAT**C**AGACCAGT | 1894 |
| | ACTGGTCT**G**ATCATCAT | 1895 |
| Haemophilia A Thr118Ile ACC-ATC | TGGATATAGAAAGGACAATTTTATTTCTTCCTGCTATAGGAGC TGAATATGATGATCAGA**C**CAGTCAAAGGGAGAAAGAAGATGA TAAAGTCTTCCCTGGTGGAAGCCATACATATGTCTG | 1896 |
| | CAGACATATGTATGGCTTCCACCAGGGAAGACTTTATCATCTT CTTTCTCCCTTTGACTG**G**TCTGATCATCATATTCAGCTCCTAT AGCAGGAAGAAATAAAATTGTCCTTTCTATATCCA | 1897 |
| | TGATCAGA**C**CAGTCAAA | 1898 |
| | TTTGACTG**G**TCTGATCA | 1899 |
| Haemophilia A Glu122Term gGAG-TAG | AGGACAATTTTATTTCTTCCTGCTATAGGAGCTGAATATGATG ATCAGACCAGTCAAAGG**G**AGAAAGAAGATGATAAAGTCTTCC CTGGTGGAAGCCATACATATGTCTGGCAGGTCCTGA | 1900 |
| | TCAGGACCTGCCAGACATATGTATGGCTTCCACCAGGGAAGA CTTTATCATCTTCTTTCT**C**CCTTTGACTGGTCTGATCATCATAT TCAGCTCCTATAGCAGGAAGAAATAAAATTGTCCT | 1901 |
| | GTCAAAGG**G**AGAAAGAA | 1902 |
| | TTCTTTCT**C**CCTTTGAC | 1903 |
| Haemophilia A Asp126His tGAT-CAT | TTTCTTCCTGCTATAGGAGCTGAATATGATGATCAGACCAGTC AAAGGGAGAAAGAAGAT**G**ATAAAGTCTTCCCTGGTGGAAGCC ATACATATGTCTGGCAGGTCCTGAAAGAGAATGGTC | 1904 |
| | GACCATTCTCTTTCAGGACCTGCCAGACATATGTATGGCTTCC ACCAGGGAAGACTTTAT**C**ATCTTCTTTCTCCCTTTGACTGGTC TGATCATCATATTCAGCTCCTATAGCAGGAAGAAA | 1905 |
| | AAGAAGAT**G**ATAAAGTC | 1906 |
| | GACTTTAT**C**ATCTTCTT | 1907 |
| Haemophilia A Gln139Term gCAG-TAG | AGTCAAAGGGAGAAAGAAGATGATAAAGTCTTCCCTGGTGGA AGCCATACATATGTCTGG**C**AGGTCCTGAAAGAGAATGGTCCA ATGGCCTCTGACCCACTGTGCCTTACCTACTCATATC | 1908 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GATATGAGTAGGTAAGGCACAGTGGGTCAGAGGCCATTGGA CCATTCTCTTTCAGGACCTGCCAGACATATGTATGGCTTCCAC CAGGGAAGACTTTATCATCTTCTTTCTCCCTTTGACT | 1909 |
| | ATGTCTGGCAGGTCCTG | 1910 |
| | CAGGACCTGCCAGACAT | 1911 |
| Haemophilia A Val140Ala GTC-GCC | AAAGGGAGAAAGAAGATGATAAAGTCTTCCCTGGTGGAAGCC ATACATATGTCTGGCAGGTCCTGAAAGAGAATGGTCCAATGG CCTCTGACCCACTGTGCCTTACCTACTCATATCTTTC | 1912 |
| | GAAAGATATGAGTAGGTAAGGCACAGTGGGTCAGAGGCCATT GGACCATTCTCTTTCAGGACCTGCCAGACATATGTATGGCTT CCACCAGGGAAGACTTTATCATCTTCTTTCTCCCTTT | 1913 |
| | CTGGCAGGTCCTGAAAG | 1914 |
| | CTTTCAGGACCTGCCAG | 1915 |
| Haemophilia A Asn144Lys AATg-AAA | AGATGATAAAGTCTTCCCTGGTGGAAGCCATACATATGTCTG GCAGGTCCTGAAAGAGAATGGTCCAATGGCCTCTGACCCACT GTGCCTTACCTACTCATATCTTTCTCATGTGGACCTG | 1916 |
| | CAGGTCCACATGAGAAAGATATGAGTAGGTAAGGCACAGTGG GTCAGAGGCCATTGGACCATTCTCTTTCAGGACCTGCCAGAC ATATGTATGGCTTCCACCAGGGAAGACTTTATCATCT | 1917 |
| | AAAGAGAATGGTCCAAT | 1918 |
| | ATTGGACCATTCTCTTT | 1919 |
| Haemophilia AG Gly145Asp GGT-GAT | ATGATAAAGTCTTCCCTGGTGGAAGCCATACATATGTCTGGCA GGTCCTGAAAGAGAATGGGTCCAATGGCCTCTGACCCACTGTG CCTTACCTACTCATATCTTTCTCATGTGGACCTGGT | 1920 |
| | ACCAGGTCCACATGAGAAAGATATGAGTAGGTAAGGCACAGT GGGTCAGAGGCCATTGGACCATTCTCTTTCAGGACCTGCCAG ACATATGTATGGCTTCCACCAGGGAAGACTTTATCAT | 1921 |
| | AGAGAATGGGTCCAATGG | 1922 |
| | CCATTGGACCATTCTCT | 1923 |
| Haemophilia A Gly145Val GGT-GTT | ATGATAAAGTCTTCCCTGGTGGAAGCCATACATATGTCTGGCA GGTCCTGAAAGAGAATGGGTCCAATGGCCTCTGACCCACTGTG CCTTACCTACTCATATCTTTCTCATGTGGACCTGGT | 1924 |
| | ACCAGGTCCACATGAGAAAGATATGAGTAGGTAAGGCACAGT GGGTCAGAGGCCATTGGACCATTCTCTTTCAGGACCTGCCAG ACATATGTATGGCTTCCACCAGGGAAGACTTTATCAT | 1925 |
| | AGAGAATGGGTCCAATGG | 1926 |
| | CCATTGGACCATTCTCT | 1927 |
| Haemophilia A Pro146Ser tCCA-TCA | GATAAAGTCTTCCCTGGTGGAAGCCATACATATGTCTGGCAG GTCCTGAAAGAGAATGGTCCAATGGCCTCTGACCCACTGTGC CTTACCTACTCATATCTTTCTCATGTGGACCTGGTAA | 1928 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTACCAGGTCCACATGAGAAAGATATGAGTAGGTAAGGCACA GTGGGTCAGAGGCCATTGGACCATTCTCTTTCAGGACCTGCC AGACATATGTATGGCTTCCACCAGGGAAGACTTTATC | 1929 |
| | AGAATGGTCCAATGGCC | 1930 |
| | GGCCATTGGACCATTCT | 1931 |
| Haemophilia A Cys153Trp TGCc-TGG | CCATACATATGTCTGGCAGGTCCTGAAAGAGAATGGTCCAAT GGCCTCTGACCCACTGTGCCTTACCTACTCATATCTTTCTCAT GTGGACCTGGTAAAAGACTTGAATTCAGGCCTCATT | 1932 |
| | AATGAGGCCTGAATTCAAGTCTTTTACCAGGTCCACATGAGAA AGATATGAGTAGGTAAGGCACAGTGGGTCAGAGGCCATTGGA CCATTCTCTTTCAGGACCTGCCAGACATATGTATGG | 1933 |
| | CCACTGTGCCTTACCTA | 1934 |
| | TAGGTAAGGCACAGTGG | 1935 |
| Haemophilia A Tyr156Term TACt-TAA | TGTCTGGCAGGTCCTGAAAGAGAATGGTCCAATGGCCTCTGA CCCACTGTGCCTTACCTACTCATATCTTTCTCATGTGGACCTG GTAAAAGACTTGAATTCAGGCCTCATTGGAGCCCTA | 1936 |
| | TAGGGCTCCAATGAGGCCTGAATTCAAGTCTTTTACCAGGTC CACATGAGAAAGATATGAGTAGGTAAGGCACAGTGGGTCAGA GGCCATTGGACCATTCTCTTTCAGGACCTGCCAGACA | 1937 |
| | CTTACCTACTCATATCT | 1938 |
| | AGATATGAGTAGGTAAG | 1939 |
| Haemophilia A Ser157Pro cTCA-CCA | GTCTGGCAGGTCCTGAAAGAGAATGGTCCAATGGCCTCTGAC CCACTGTGCCTTACCTACTCATATCTTTCTCATGTGGACCTGG TAAAAGACTTGAATTCAGGCCTCATTGGAGCCCTAC | 1940 |
| | GTAGGGCTCCAATGAGGCCTGAATTCAAGTCTTTTACCAGGT CCACATGAGAAAGATATGAGTAGGTAAGGCACAGTGGGTCAG AGGCCATTGGACCATTCTCTTTCAGGACCTGCCAGAC | 1941 |
| | TTACCTACTCATATCTT | 1942 |
| | AAGATATGAGTAGGTAA | 1943 |
| Haemophilia A Ser160Pro tTCT-CCT | GTCCTGAAAGAGAATGGTCCAATGGCCTCTGACCCACTGTGC CTTACCTACTCATATCTTTCTCATGTGGACCTGGTAAAAGACT TGAATTCAGGCCTCATTGGAGCCCTACTAGTATGTA | 1944 |
| | TACATACTAGTAGGGCTCCAATGAGGCCTGAATTCAAGTCTTT TACCAGGTCCACATGAGAAAGATATGAGTAGGTAAGGCACAG TGGGTCAGAGGCCATTGGACCATTCTCTTTCAGGAC | 1945 |
| | CATATCTTTCTCATGTG | 1946 |
| | CACATGAGAAAGATATG | 1947 |
| Haemophilia A Val162Met tGTG-ATG | AAAGAGAATGGTCCAATGGCCTCTGACCCACTGTGCCTTACC TACTCATATCTTTCTCATGTGGACCTGGTAAAAGACTTGAATT CAGGCCTCATTGGAGCCCTACTAGTATGTAGAGAAG | 1948 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTTCTCTACATACTAGTAGGGCTCCAATGAGGCCTGAATTCAA GTCTTTTACCAGGTCCA**C**ATGAGAAAGATATGAGTAGGTAAG GCACAGTGGGTCAGAGGCCATTGGACCATTCTCTTT | 1949 |
| | TTTCTCAT**G**TGGACCTG | 1950 |
| | CAGGTCCA**C**ATGAGAAA | 1951 |
| Haemophilia A Lys166Thr AAA-ACA | CAATGGCCTCTGACCCACTGTGCCTTACCTACTCATATCTTTC TCATGTGGACCTGGTAA**A**AGACTTGAATTCAGGCCTCATTGG AGCCCTACTAGTATGTAGAGAAGGTAAGTGTATGAA | 1952 |
| | TTCATACACTTACCTTCTCTACATACTAGTAGGGCTCCAATGA GGCCTGAATTCAAGTCT**T**TTACCAGGTCCACATGAGAAAGATA TGAGTAGGTAAGGCACAGTGGGTCAGAGGCCATTG | 1953 |
| | CCTGGTAA**A**AGACTTGA | 1954 |
| | TCAAGTCT**T**TTACCAGG | 1955 |
| Haemophilia A Ser170Leu TCA-TTA | ACCCACTGTGCCTTACCTACTCATATCTTTCTCATGTGGACCT GGTAAAAGACTTGAATT**C**AGGCCTCATTGGAGCCCTACTAGT ATGTAGAGAAGGTAAGTGTATGAAAGCGTAGGATTG | 1956 |
| | CAATCCTACGCTTTCATACACTTACCTTCTCTACATACTAGTAG GGCTCCAATGAGGCCT**G**AATTCAAGTCTTTTACCAGGTCCAC ATGAGAAAGATATGAGTAGGTAAGGCACAGTGGGT | 1957 |
| | CTTGAATT**C**AGGCCTCA | 1958 |
| | TGAGGCCT**G**AATTCAAG | 1959 |
| Haemophilia A Phe195Val aTTT-GTT | AATGTTCTCACTTCTTTTTCAGGGAGTCTGGCCAAGGAAAAGA CACAGACCTTGCACAAA**T**TTATACTACTTTTTGCTGTATTTGAT GAAGGTTAGTGAGTCTTAATCTGAATTTTGGATT | 1960 |
| | AATCCAAAATTCAGATTAAGACTCACTAACCTTCATCAAATACA GCAAAAAGTAGTATAA**A**TTTGTGCAAGGTCTGTGTCTTTTCCT TGGCCAGACTCCCTGAAAAAGAAGTGAGAACATT | 1961 |
| | TGCACAAA**T**TTATACTA | 1962 |
| | TAGTATAA**A**TTTGTGCA | 1963 |
| Haemophilia A Leu198His CTT-CAT | CTTCTTTTTCAGGGAGTCTGGCCAAGGAAAAGACACAGACCT TGCACAAATTTATACTAC**T**TTTTGCTGTATTTGATGAAGGTTAG TGAGTCTTAATCTGAATTTTGGATTCCTGAAAGAA | 1964 |
| | TTCTTTCAGGAATCCAAAATTCAGATTAAGACTCACTAACCTTC ATCAAATACAGCAAAA**A**GTAGTATAAATTTGTGCAAGGTCTGT GTCTTTTCCTTGGCCAGACTCCCTGAAAAAGAAG | 1965 |
| | TATACTAC**T**TTTTGCTG | 1966 |
| | CAGCAAAA**A**GTAGTATA | 1967 |
| Haemophilia A Ala200Asp GCT-GAT | TTTCAGGGAGTCTGGCCAAGGAAAAGACACAGACCTTGCACA AATTTATACTACTTTTTG**C**TGTATTTGATGAAGGTTAGTGAGTC TTAATCTGAATTTTGGATTCCTGAAAGAAATCCTC | 1968 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GAGGATTTCTTTCAGGAATCCAAAATTCAGATTAAGACTCACT AACCTTCATCAAATACAGCAAAAAGTAGTATAAATTTGTGCAA GGTCTGTGTCTTTTCCTTGGCCAGACTCCCTGAAA | 1969 |
| | ACTTTTTGCTGTATTTG | 1970 |
| | CAAATACAGCAAAAAGT | 1971 |
| Haemophilia A Ala200Thr tGCT-ACT | TTTTCAGGGAGTCTGGCCAAGGAAAAGACACAGACCTTGCAC AAATTTATACTACTTTTTGCTGTATTTGATGAAGGTTAGTGAGT CTTAATCTGAATTTTGGATTCCTGAAAGAAATCCT | 1972 |
| | AGGATTTCTTTCAGGAATCCAAAATTCAGATTAAGACTCACTA ACCTTCATCAAATACAGCAAAAAGTAGTATAAATTTGTGCAAG GTCTGTGTCTTTTCCTTGGCCAGACTCCCTGAAAA | 1973 |
| | TACTTTTTGCTGTATTT | 1974 |
| | AAATACAGCAAAAAGTA | 1975 |
| Haemophilia A Val234Phe aGTC-TTC | AACTCCTTGATGCAGGATAGGGATGCTGCATCTGCTCGGGCC TGGCCTAAAATGCACACAGTCAATGGTTATGTAAACAGGTCTC TGCCAGGTATGTACACACCTGCTCAACAATCCTCAG | 1976 |
| | CTGAGGATTGTTGAGCAGGTGTGTACATACCTGGCAGAGACC TGTTTACATAACCATTGACTGTGTGCATTTTAGGCCAGGCCCG AGCAGATGCAGCATCCCTATCCTGCATCAAGGAGTT | 1977 |
| | TGCACACAGTCAATGGT | 1978 |
| | ACCATTGACTGTGTGCA | 1979 |
| Haemophilia A Gly247Glu GGA-GAA | ATTTCAGATTCTCTACTTCATAGCCATAGGTGTCTTATTCCTAC TTTACAGGTCTGATTGGATGCCACAGGAAATCAGTCTATTGGC ATGTGATTGGAATGGGCACCACTCCTGAAGTGCA | 1980 |
| | TGCACTTCAGGAGTGGTGCCCATTCCAATCACATGCCAATAG ACTGATTTCCTGTGGCATCCAATCAGACCTGTAAAGTAGGAAT AAGACACCTATGGCTATGAAGTAGAGAATCTGAAAT | 1981 |
| | TCTGATTGGATGCCACA | 1982 |
| | TGTGGCATCCAATCAGA | 1983 |
| Haemophilia A Trp255Cys TGGc-TGT | ATAGGTGTCTTATTCCTACTTTACAGGTCTGATTGGATGCCAC AGGAAATCAGTCTATTGGCATGTGATTGGAATGGGCACCACT CCTGAAGTGCACTCAATATTCCTCGAAGGTCACACA | 1984 |
| | TGTGTGACCTTCGAGGAATATTGAGTGCACTTCAGGAGTGGT GCCCATTCCAATCACATGCCAATAGACTGATTTCCTGTGGCAT CCAATCAGACCTGTAAAGTAGGAATAAGACACCTAT | 1985 |
| | GTCTATTGGCATGTGAT | 1986 |
| | ATCACATGCCAATAGAC | 1987 |
| Haemophilia A Trp255Term TGGc-TGA | ATAGGTGTCTTATTCCTACTTTACAGGTCTGATTGGATGCCAC AGGAAATCAGTCTATTGGCATGTGATTGGAATGGGCACCACT CCTGAAGTGCACTCAATATTCCTCGAAGGTCACACA | 1988 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGTGTGACCTTCGAGGAATATTGAGTGCACTTCAGGAGTGGT GCCCATTCCAATCACATGCCAATAGACTGATTTCCTGTGGCAT CCAATCAGACCTGTAAAGTAGGAATAAGACACCTAT | 1989 |
| | GTCTATTGGCATGTGAT | 1990 |
| | ATCACATGCCAATAGAC | 1991 |
| Haemophilia A His256Leu CAT-CTT | AGGTGTCTTATTCCTACTTTACAGGTCTGATTGGATGCCACAG GAAATCAGTCTATTGGCATGTGATTGGAATGGGCACCACTCC TGAAGTGCACTCAATATTCCTCGAAGGTCACACATT | 1992 |
| | AATGTGTGACCTTCGAGGAATATTGAGTGCACTTCAGGAGTG GTGCCCATTCCAATCACATGCCAATAGACTGATTTCCTGTGG CATCCAATCAGACCTGTAAAGTAGGAATAAGACACCT | 1993 |
| | CTATTGGCATGTGATTG | 1994 |
| | CAATCACATGCCAATAG | 1995 |
| Haemophilia A Gly259Arg tGGA-AGA | TATTCCTACTTTACAGGTCTGATTGGATGCCACAGGAAATCAG TCTATTGGCATGTGATTGGAATGGGCACCACTCCTGAAGTGC ACTCAATATTCCTCGAAGGTCACACATTTCTTGTGA | 1996 |
| | TCACAAGAAATGTGTGACCTTCGAGGAATATTGAGTGCACTTC AGGAGTGGTGCCCATTCCAATCACATGCCAATAGACTGATTT CCTGTGGCATCCAATCAGACCTGTAAAGTAGGAATA | 1997 |
| | ATGTGATTGGAATGGGC | 1998 |
| | GCCCATTCCAATCACAT | 1999 |
| Haemophilia A Val266Gly GTG-GGG | TTGGATGCCACAGGAAATCAGTCTATTGGCATGTGATTGGAAT GGGCACCACTCCTGAAGTGCACTCAATATTCCTCGAAGGTCA CACATTTCTTGTGAGGAACCATCGCCAGGCGTCCTT | 2000 |
| | AAGGACGCCTGGCGATGGTTCCTCACAAGAAATGTGTGACCT TCGAGGAATATTGAGTGCACTTCAGGAGTGGTGCCCATTCCA ATCACATGCCAATAGACTGATTTCCTGTGGCATCCAA | 2001 |
| | TCCTGAAGTGCACTCAA | 2002 |
| | TTGAGTGCACTTCAGGA | 2003 |
| Haemophilia A Glu272Gly GAA-GGA | CAGTCTATTGGCATGTGATTGGAATGGGCACCACTCCTGAAG TGCACTCAATATTCCTCGAAGGTCACACATTTCTTGTGAGGAA CCATCGCCAGGCGTCCTTGGAAATCTCGCCAATAAC | 2004 |
| | GTTATTGGCGAGATTTCCAAGGACGCCTGGCGATGGTTCCTC ACAAGAAATGTGTGACCTTCGAGGAATATTGAGTGCACTTCAG GAGTGGTGCCCATTCCAATCACATGCCAATAGACTG | 2005 |
| | ATTCCTCGAAGGTCACA | 2006 |
| | TGTGACCTTCGAGGAAT | 2007 |
| Haemophilia A Glu272Lys cGAA-AAA | TCAGTCTATTGGCATGTGATTGGAATGGGCACCACTCCTGAA GTGCACTCAATATTCCTCGAAGGTCACACATTTCTTGTGAGGA ACCATCGCCAGGCGTCCTTGGAAATCTCGCCAATAA | 2008 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTATTGGCGAGATTTCCAAGGACGCCTGGCGATGGTTCCTCA CAAGAAATGTGTGACCTTCGAGGAATATTGAGTGCACTTCAG GAGTGGTGCCCATTCCAATCACATGCCAATAGACTGA | 2009 |
| | TATTCCTCGAAGGTCAC | 2010 |
| | GTGACCTTCGAGGAATA | 2011 |
| Haemophilia A Thr275Ile ACA-ATA | GGCATGTGATTGGAATGGGCACCACTCCTGAAGTGCACTCAA TATTCCTCGAAGGTCACACATTTCTTGTGAGGAACCATCGCCA GGCGTCCTTGGAAATCTCGCCAATAACTTTCCTTAC | 2012 |
| | GTAAGGAAAGTTATTGGCGAGATTTCCAAGGACGCCTGGCGA TGGTTCCTCACAAGAAATGTGTGACCTTCGAGGAATATTGAGT GCACTTCAGGAGTGGTGCCCATTCCAATCACATGCC | 2013 |
| | AGGTCACACATTTCTTG | 2014 |
| | CAAGAAATGTGTGACCT | 2015 |
| Haemophilia A Val278Ala GTG-GCG | TTGGAATGGGCACCACTCCTGAAGTGCACTCAATATTCCTCG AAGGTCACACATTTCTTGTGAGGAACCATCGCCAGGCGTCCT TGGAAATCTCGCCAATAACTTTCCTTACTGCTCAAAC | 2016 |
| | GTTTGAGCAGTAAGGAAAGTTATTGGCGAGATTTCCAAGGAC GCCTGGCGATGGTTCCTCACAAGAAATGTGTGACCTTCGAGG AATATTGAGTGCACTTCAGGAGTGGTGCCCATTCCAA | 2017 |
| | ATTTCTTGTGAGGAACC | 2018 |
| | GGTTCCTCACAAGAAAT | 2019 |
| Haemophilia A Asn280Ile AAC-ATC | TGGGCACCACTCCTGAAGTGCACTCAATATTCCTCGAAGGTC ACACATTTCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAAA TCTCGCCAATAACTTTCCTTACTGCTCAAACACTCTT | 2020 |
| | AAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAGATTTCCA AGGACGCCTGGCGATGGTTCCTCACAAGAAATGTGTGACCTT CGAGGAATATTGAGTGCACTTCAGGAGTGGTGCCCA | 2021 |
| | TGTGAGGAACCATCGCC | 2022 |
| | GGCGATGGTTCCTCACA | 2023 |
| Haemophilia A Arg282Cys tCGC-TGC | ACCACTCCTGAAGTGCACTCAATATTCCTCGAAGGTCACACAT TTCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAAATCTCGC CAATAACTTTCCTTACTGCTCAAACACTCTTGATGG | 2024 |
| | CCATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAGA TTTCCAAGGACGCCTGGCGATGGTTCCTCACAAGAAATGTGT GACCTTCGAGGAATATTGAGTGCACTTCAGGAGTGGT | 2025 |
| | GGAACCATCGCCAGGCG | 2026 |
| | CGCCTGGCGATGGTTCC | 2027 |
| Haemophilia A Arg282His CGC-CAC | CCACTCCTGAAGTGCACTCAATATTCCTCGAAGGTCACACATT TCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAAATCTCGCC AATAACTTTCCTTACTGCTCAAACACTCTTGATGGA | 2028 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TCCATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAG ATTTCCAAGGACGCCTGG**C**GATGGTTCCTCACAAGAAATGTG TGACCTTCGAGGAATATTGAGTGCACTTCAGGAGTGG | 2029 |
| | GAACCATC**G**CCAGGCGT | 2030 |
| | ACGCCTGG**C**GATGGTTC | 2031 |
| Haemophilia A Arg282Leu CGC-CTC | CCACTCCTGAAGTGCACTCAATATTCCTCGAAGGTCACACATT TCTTGTGAGGAACCATC**G**CCAGGCGTCCTTGGAAATCTCGCC AATAACTTTCCTTACTGCTCAAACACTCTTGATGGA | 2032 |
| | TCCATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAG ATTTCCAAGGACGCCTGG**C**GATGGTTCCTCACAAGAAATGTG TGACCTTCGAGGAATATTGAGTGCACTTCAGGAGTGG | 2033 |
| | GAACCATC**G**CCAGGCGT | 2034 |
| | ACGCCTGG**C**GATGGTTC | 2035 |
| Haemophilia A Ala284Glu GCG-GAG | CTGAAGTGCACTCAATATTCCTCGAAGGTCACACATTTCTTGT GAGGAACCATCGCCAGG**C**GTCCTTGGAAATCTCGCCAATAAC TTTCCTTACTGCTCAAACACTCTTGATGGACCTTGG | 2036 |
| | CCAAGGTCCATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATT GGCGAGATTTCCAAGGAC**G**CCTGGCGATGGTTCCTCACAAG AAATGTGTGACCTTCGAGGAATATTGAGTGCACTTCAG | 2037 |
| | TCGCCAGG**C**GTCCTTGG | 2038 |
| | CCAAGGAC**G**CCTGGCGA | 2039 |
| Haemophilia A Ala284Pro gGCG-CCG | CCTGAAGTGCACTCAATATTCCTCGAAGGTCACACATTTCTTG TGAGGAACCATCGCCAG**G**CGTCCTTGGAAATCTCGCCAATAA CTTTCCTTACTGCTCAAACACTCTTGATGGACCTTG | 2040 |
| | CAAGGTCCATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTG GCGAGATTTCCAAGGACG**C**CTGGCGATGGTTCCTCACAAGAA ATGTGTGACCTTCGAGGAATATTGAGTGCACTTCAGG | 2041 |
| | ATCGCCAG**G**CGTCCTTG | 2042 |
| | CAAGGACG**C**CTGGCGAT | 2043 |
| Haemophilia A Ser289Leu TCG-TTG | TATTCCTCGAAGGTCACACATTTCTTGTGAGGAACCATCGCCA GGCGTCCTTGGAAATCT**C**GCCAATAACTTTCCTTACTGCTCAA ACACTCTTGATGGACCTTGGACAGTTTCTACTGTT | 2044 |
| | AACAGTAGAAACTGTCCAAGGTCCATCAAGAGTGTTTGAGCA GTAAGGAAAGTTATTGGC**G**AGATTTCCAAGGACGCCTGGCGA TGGTTCCTCACAAGAAATGTGTGACCTTCGAGGAATA | 2045 |
| | GGAAATCT**C**GCCAATAA | 2046 |
| | TTATTGGC**G**AGATTTCC | 2047 |
| Haemophilia A Phe293Ser TTC-TCC | GTCACACATTTCTTGTGAGGAACCATCGCCAGGCGTCCTTGG AAATCTCGCCAATAACTT**T**CCTTACTGCTCAAACACTCTTGAT GGACCTTGGACAGTTTCTACTGTTTTGTCATATCTC | 2048 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GAGATATGACAAAACAGTAGAAACTGTCCAAGGTCCATCAAG AGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAGATTTCCAAG GACGCCTGGCGATGGTTCCTCACAAGAAATGTGTGAC | 2049 |
| | AATAACTTTCCTTACTG | 2050 |
| | CAGTAAGGAAAGTTATT | 2051 |
| Haemophilia A Thr295Ala tACT-GCT | ACATTTCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAAATC TCGCCAATAACTTTCCTTACTGCTCAAACACTCTTGATGGACC TTGGACAGTTTCTACTGTTTTGTCATATCTCTTCCC | 2052 |
| | GGGAAGAGATATGACAAAACAGTAGAAACTGTCCAAGGTCCA TCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAGATTTC CAAGGACGCCTGGCGATGGTTCCTCACAAGAAATGT | 2053 |
| | CTTTCCTTACTGCTCAA | 2054 |
| | TTGAGCAGTAAGGAAAG | 2055 |
| Haemophilia A Thr295Ile ACT-ATT | CATTTCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAAATCT CGCCAATAACTTTCCTTACTGCTCAAACACTCTTGATGGACCT TGGACAGTTTCTACTGTTTTGTCATATCTCTTCCCA | 2056 |
| | TGGGAAGAGATATGACAAAACAGTAGAAACTGTCCAAGGTCC ATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAGATTT CCAAGGACGCCTGGCGATGGTTCCTCACAAGAAATG | 2057 |
| | TTTCCTTACTGCTCAAA | 2058 |
| | TTTGAGCAGTAAGGAAA | 2059 |
| Haemophilia A Ala296Val GCT-GTT | TTCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAAATCTCGC CAATAACTTTCCTTACTGCTCAAACACTCTTGATGGACCTTGG ACAGTTTCTACTGTTTTGTCATATCTCTTCCCACCA | 2060 |
| | TGGTGGGAAGAGATATGACAAAACAGTAGAAACTGTCCAAGG TCCATCAAGAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAG ATTTCCAAGGACGCCTGGCGATGGTTCCTCACAAGAA | 2061 |
| | CCTTACTGCTCAAACAC | 2062 |
| | GTGTTTGAGCAGTAAGG | 2063 |
| Haemophilia A Leu308Pro CTG-CCG | TCTCGCCAATAACTTTCCTTACTGCTCAAACACTCTTGATGGA CCTTGGACAGTTTCTACTGTTTTGTCATATCTCTTCCCACCAA CATGGTAATATCTTGGATCTTTAAAATGAATATTA | 2064 |
| | TAATATTCATTTTAAAGATCCAAGATATTACCATGTTGGTGGGA AGAGATATGACAAAACAGTAGAAACTGTCCAAGGTCCATCAA GAGTGTTTGAGCAGTAAGGAAAGTTATTGGCGAGA | 2065 |
| | GTTTCTACTGTTTTGTC | 2066 |
| | GACAAAACAGTAGAAAC | 2067 |
| Haemophilia A Glu321Lys gGAA-AAA | ACAGCCTAATATAGCAAGACACTCTGACATTGTTTGGTTTGTC TGACTCCAGATGGCATGGAAGCTTATGTCAAAGTAGACAGCT GTCCAGAGGAACCCCAACTACGAATGAAAAATAATG | 2068 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CATTATTTTTCATTCGTAGTTGGGGTTCCTCTGGACAGCTGTC TACTTTGACATAAGCTT**C**CATGCCATCTGGAGTCAGACAAACC AAACAATGTCAGAGTGTCTTGCTATATTAGGCTGT | 2069 |
| | ATGGCATG**G**AAGCTTAT | 2070 |
| | ATAAGCTT**C**CATGCCAT | 2071 |
| Haemophilia A Tyr323Term TATg-TAA | ATATAGCAAGACACTCTGACATTGTTTGGTTTGTCTGACTCCA GATGGCATGGAAGCTTA**T**GTCAAAGTAGACAGCTGTCCAGAG GAACCCCAACTACGAATGAAAAATAATGAAGAAGCG | 2072 |
| | CGCTTCTTCATTATTTTTCATTCGTAGTTGGGGTTCCTCTGGA CAGCTGTCTACTTTGAC**A**TAAGCTTCCATGCCATCTGGAGTCA GACAAACCAAACAATGTCAGAGTGTCTTGCTATAT | 2073 |
| | GAAGCTTA**T**GTCAAAGT | 2074 |
| | ACTTTGAC**A**TAAGCTTC | 2075 |
| Haemophilia A Val326Leu aGTA-CTA | AAGACACTCTGACATTGTTTGGTTTGTCTGACTCCAGATGGCA TGGAAGCTTATGTCAAA**G**TAGACAGCTGTCCAGAGGAACCCC AACTACGAATGAAAAATAATGAAGAAGCGGAAGACT | 2076 |
| | AGTCTTCCGCTTCTTCATTATTTTTCATTCGTAGTTGGGGTTC CTCTGGACAGCTGTCTA**C**TTTGACATAAGCTTCCATGCCATCT GGAGTCAGACAAACCAAACAATGTCAGAGTGTCTT | 2077 |
| | ATGTCAAA**G**TAGACAGC | 2078 |
| | GCTGTCTA**C**TTTGACAT | 2079 |
| Haemophilia A Cys329Arg cTGT-CGT | TGACATTGTTTGGTTTGTCTGACTCCAGATGGCATGGAAGCTT ATGTCAAAGTAGACAGC**T**GTCCAGAGGAACCCCAACTACGAA TGAAAAATAATGAAGAAGCGGAAGACTATGATGATG | 2080 |
| | CATCATCATAGTCTTCCGCTTCTTCATTATTTTTCATTCGTAGT TGGGGTTCCTCTGGAC**A**GCTGTCTACTTTGACATAAGCTTCC ATGCCATCTGGAGTCAGACAAACCAAACAATGTCA | 2081 |
| | TAGACAGC**T**GTCCAGAG | 2082 |
| | CTCTGGAC**A**GCTGTCTA | 2083 |
| Haemophilia A Cys329Tyr TGT-TAT | GACATTGTTTGGTTTGTCTGACTCCAGATGGCATGGAAGCTTA TGTCAAAGTAGACAGCT**G**TCCAGAGGAACCCCAACTACGAAT GAAAAATAATGAAGAAGCGGAAGACTATGATGATGA | 2084 |
| | TCATCATCATAGTCTTCCGCTTCTTCATTATTTTTCATTCGTAG TTGGGGTTCCTCTGGA**C**AGCTGTCTACTTTGACATAAGCTTCC ATGCCATCTGGAGTCAGACAAACCAAACAATGTC | 2085 |
| | AGACAGCT**G**TCCAGAGG | 2086 |
| | CCTCTGGA**C**AGCTGTCT | 2087 |
| Haemophilia A Arg336Term aCGA-TGA | ACTCCAGATGGCATGGAAGCTTATGTCAAAGTAGACAGCTGT CCAGAGGAACCCCAACTA**C**GAATGAAAAATAATGAAGAAGCG GAAGACTATGATGATGATCTTACTGATTCTGAAATGG | 2088 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCATTTCAGAATCAGTAAGATCATCATCATAGTCTTCCGCTTC TTCATTATTTTTCATTCGTAGTTGGGGTTCCTCTGGACAGCTG TCTACTTTGACATAAGCTTCCATGCCATCTGGAGT | 2089 |
| | CCCAACTACGAATGAAA | 2090 |
| | TTTCATTCGTAGTTGGG | 2091 |
| Haemophilia A Arg372Cys tCGC-TGC | GATTCTGAAATGGATGTGGTCAGGTTTGATGATGACAACTCTC CTTCCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAA AACTTGGGTACATTACATTGCTGCTGAAGAGGAGG | 2092 |
| | CCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAGGATG CTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAGGAGAGTT GTCATCATCAAACCTGACCACATCCATTTCAGAATC | 2093 |
| | TCCAAATTCGCTCAGTT | 2094 |
| | AACTGAGCGAATTTGGA | 2095 |
| Haemophilia A Arg372His CGC-CAC | ATTCTGAAATGGATGTGGTCAGGTTTGATGATGACAACTCTCC TTCCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAAA ACTTGGGTACATTACATTGCTGCTGAAGAGGAGGA | 2096 |
| | TCCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAGGAT GCTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAGGAGAGT TGTCATCATCAAACCTGACCACATCCATTTCAGAAT | 2097 |
| | CCAAATTCGCTCAGTTG | 2098 |
| | CAACTGAGCGAATTTGG | 2099 |
| Haemophilia A Ser373Leu TCA-TTA | CTGAAATGGATGTGGTCAGGTTTGATGATGACAACTCTCCTTC CTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAAAACT TGGGTACATTACATTGCTGCTGAAGAGGAGGACTG | 2100 |
| | CAGTCCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAG GATGCTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAGGAG AGTTGTCATCATCAAACCTGACCACATCCATTTCAG | 2101 |
| | AATTCGCTCAGTTGCCA | 2102 |
| | TGGCAACTGAGCGAATT | 2103 |
| Haemophilia A Ser373Pro cTCA-CCA | TCTGAAATGGATGTGGTCAGGTTTGATGATGACAACTCTCCTT CCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAAAAC TTGGGTACATTACATTGCTGCTGAAGAGGAGGACT | 2104 |
| | AGTCCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAGG ATGCTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAGGAGA GTTGTCATCATCAAACCTGACCACATCCATTTCAGA | 2105 |
| | AAATTCGCTCAGTTGCC | 2106 |
| | GGCAACTGAGCGAATTT | 2107 |
| Haemophilia A Ser373Term TCA-TAA | CTGAAATGGATGTGGTCAGGTTTGATGATGACAACTCTCCTTC CTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAAAACT TGGGTACATTACATTGCTGCTGAAGAGGAGGACTG | 2108 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CAGTCCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAG GATGCTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAGGAG AGTTGTCATCATCAAACCTGACCACATCCATTTCAG | 2109 |
| | AATTCGCTCAGTTGCCA | 2110 |
| | TGGCAACTGAGCGAATT | 2111 |
| Haemophilia A Ile386Phe cATT-TTT | CCTTCCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTA AAACTTGGGTACATTACATTGCTGCTGAAGAGGAGGACTGGG ACTATGCTCCCTTAGTCCTCGCCCCCGATGACAGGT | 2112 |
| | ACCTGTCATCGGGGGCGAGGACTAAGGGAGCATAGTCCCAG TCCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAGGAT GCTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAGG | 2113 |
| | TACATTACATTGCTGCT | 2114 |
| | AGCAGCAATGTAATGTA | 2115 |
| Haemophilia A Ile386Ser ATT-AGT | CTTCCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAA AACTTGGGTACATTACATTGCTGCTGAAGAGGAGGACTGGGA CTATGCTCCCTTAGTCCTCGCCCCCGATGACAGGTA | 2116 |
| | TACCTGTCATCGGGGGCGAGGACTAAGGGAGCATAGTCCCA GTCCTCCTCTTCAGCAGCAATGTAATGTACCCAAGTTTTAGGA TGCTTCTTGGCAACTGAGCGAATTTGGATAAAGGAAG | 2117 |
| | ACATTACATTGCTGCTG | 2118 |
| | CAGCAGCAATGTAATGT | 2119 |
| Haemophilia A Glu390Gly GAG-GGG | AAATTCGCTCAGTTGCCAAGAAGCATCCTAAAACTTGGGTACA TTACATTGCTGCTGAAGAGGAGGACTGGGACTATGCTCCCTT AGTCCTCGCCCCCGATGACAGGTAAGCACTTTTTGA | 2120 |
| | TCAAAAAGTGCTTACCTGTCATCGGGGGCGAGGACTAAGGGA GCATAGTCCCAGTCCTCCTCTTCAGCAGCAATGTAATGTACC CAAGTTTTAGGATGCTTCTTGGCAACTGAGCGAATTT | 2121 |
| | TGCTGAAGAGGAGGACT | 2122 |
| | AGTCCTCCTCTTCAGCA | 2123 |
| Haemophilia A Trp393Gly cTGG-GGG | TCAGTTGCCAAGAAGCATCCTAAAACTTGGGTACATTACATTG CTGCTGAAGAGGAGGACTGGGACTATGCTCCCTTAGTCCTCG CCCCCGATGACAGGTAAGCACTTTTTGACTATTGGT | 2124 |
| | ACCAATAGTCAAAAAGTGCTTACCTGTCATCGGGGGCGAGGA CTAAGGGAGCATAGTCCCAGTCCTCCTCTTCAGCAGCAATGT AATGTACCCAAGTTTTAGGATGCTTCTTGGCAACTGA | 2125 |
| | AGGAGGACTGGGACTAT | 2126 |
| | ATAGTCCCAGTCCTCCT | 2127 |
| Haemophilia A Lys408Ile AAA-ATA | GCCTACCTAGAATTTTTCTTCCCAACCTCTCATCTTTTTTTCTC TTATACAGAAGTTATAAAAGTCAATATTTGAACAATGGCCCTC AGCGGATTGGTAGGAAGTACAAAAAAGTCCGATT | 2128 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AATCGGACTTTTTTGTACTTCCTACCAATCCGCTGAGGGCCAT TGTTCAAATATTGACTTTTATAACTTCTGTATAAGAGAAAAAAA GATGAGAGGTTGGGAAGAAAAATTCTAGGTAGGC | 2129 |
| | AAGTTATAAAAGTCAAT | 2130 |
| | ATTGACTTTTATAACTT | 2131 |
| Haemophilia A Leu412Phe TTGa-TTT | TTTTCTTCCCAACCTCTCATCTTTTTTTCTCTTATACAGAAGTT ATAAAAGTCAATATTTGAACAATGGCCCTCAGCGGATTGGTAG GAAGTACAAAAAAGTCCGATTTATGGCATACACA | 2132 |
| | TGTGTATGCCATAAATCGGACTTTTTTGTACTTCCTACCAATC CGCTGAGGGCCATTGTTCAAATATTGACTTTTATAACTTCTGT ATAAGAGAAAAAAAGATGAGAGGTTGGGAAGAAAA | 2133 |
| | CAATATTTGAACAATGG | 2134 |
| | CCATTGTTCAAATATTG | 2135 |
| Haemophilia A Arg418Trp gCGG-TGG | TCATCTTTTTTTCTCTTATACAGAAGTTATAAAAGTCAATATTTG AACAATGGCCCTCAGCGGATTGGTAGGAAGTACAAAAAAGTC CGATTTATGGCATACACAGATGAAACCTTTAAGA | 2136 |
| | TCTTAAAGGTTTCATCTGTGTATGCCATAAATCGGACTTTTTTG TACTTCCTACCAATCCGCTGAGGGCCATTGTTCAAATATTGAC TTTTATAACTTCTGTATAAGAGAAAAAAAGATGA | 2137 |
| | GCCCTCAGCGGATTGGT | 2138 |
| | ACCAATCCGCTGAGGGC | 2139 |
| Haemophilia A Gly420Val GGT-GTT | TTTTTCTCTTATACAGAAGTTATAAAAGTCAATATTTGAACAAT GGCCCTCAGCGGATTGGTAGGAAGTACAAAAAAGTCCGATTT ATGGCATACACAGATGAAACCTTTAAGACTCGTGA | 2140 |
| | TCACGAGTCTTAAAGGTTTCATCTGTGTATGCCATAAATCGGA CTTTTTTGTACTTCCTACCAATCCGCTGAGGGCCATTGTTCAA ATATTGACTTTTATAACTTCTGTATAAGAGAAAAA | 2141 |
| | GCGGATTGGTAGGAAGT | 2142 |
| | ACTTCCTACCAATCCGC | 2143 |
| Haemophilia A Lys425Arg AAA-AGA | GAAGTTATAAAAGTCAATATTTGAACAATGGCCCTCAGCGGAT TGGTAGGAAGTACAAAAAAGTCCGATTTATGGCATACACAGAT GAAACCTTTAAGACTCGTGAAGCTATTCAGCATGA | 2144 |
| | TCATGCTGAATAGCTTCACGAGTCTTAAAGGTTTCATCTGTGT ATGCCATAAATCGGACTTTTTGTACTTCCTACCAATCCGCTG AGGGCCATTGTTCAAATATTGACTTTTATAACTTC | 2145 |
| | GTACAAAAAAGTCCGAT | 2146 |
| | ATCGGACTTTTTTGTAC | 2147 |
| Haemophilia A Arg427Term cCGA-TGA | TATAAAAGTCAATATTTGAACAATGGCCCTCAGCGGATTGGTA GGAAGTACAAAAAAGTCCGATTTATGGCATACACAGATGAAAC CTTTAAGACTCGTGAAGCTATTCAGCATGAATCAG | 2148 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTGATTCATGCTGAATAGCTTCACGAGTCTTAAAGGTTTCATC TGTGTATGCCATAAATC**G**GACTTTTTTGTACTTCCTACCAATC CGCTGAGGGCCATTGTTCAAATATTGACTTTTATA | 2149 |
| | AAAAAGTC**C**GATTTATG | 2150 |
| | CATAAATC**G**GACTTTTT | 2151 |
| Haemophilia A Tyr431Asn aTAC-AAC | TATTTGAACAATGGCCCTCAGCGGATTGGTAGGAAGTACAAA AAAGTCCGATTTATGGCA**T**ACACAGATGAAACCTTTAAGACTC GTGAAGCTATTCAGCATGAATCAGGAATCTTGGGAC | 2152 |
| | GTCCCAAGATTCCTGATTCATGCTGAATAGCTTCACGAGTCTT AAAGGTTTCATCTGTGT**A**TGCCATAAATCGGACTTTTTTGTAC TTCCTACCAATCCGCTGAGGGCCATTGTTCAAATA | 2153 |
| | TTATGGCA**T**ACACAGAT | 2154 |
| | ATCTGTGT**A**TGCCATAA | 2155 |
| Haemophilia A Thr435Ile ACC-ATC | GCCCTCAGCGGATTGGTAGGAAGTACAAAAAAGTCCGATTTA TGGCATACACAGATGAAA**C**CTTTAAGACTCGTGAAGCTATTCA GCATGAATCAGGAATCTTGGGACCTTTACTTTATGG | 2156 |
| | CCATAAAGTAAAGGTCCCAAGATTCCTGATTCATGCTGAATAG CTTCACGAGTCTTAAAG**G**TTTCATCTGTGTATGCCATAAATCG GACTTTTTTGTACTTCCTACCAATCCGCTGAGGGC | 2157 |
| | AGATGAAA**C**CTTTAAGA | 2158 |
| | TCTTAAAG**G**TTTCATCT | 2159 |
| Haemophilia A Pro451Leu CCT-CTT | ACACAGATGAAACCTTTAAGACTCGTGAAGCTATTCAGCATGA ATCAGGAATCTTGGGAC**C**TTTACTTTATGGGGAAGTTGGAGA CACACTGTTGGTAAGTTGAAGAAAAGATTTAAGGTC | 2160 |
| | GACCTTAAATCTTTTCTTCAACTTACCAACAGTGTGTCTCCAA CTTCCCCATAAAGTAAA**G**GTCCCAAGATTCCTGATTCATGCTG AATAGCTTCACGAGTCTTAAAGGTTTCATCTGTGT | 2161 |
| | CTTGGGAC**C**TTTACTTT | 2162 |
| | AAAGTAAA**G**GTCCCAAG | 2163 |
| Haemophilia A Pro451Thr aCCT-ACT | TACACAGATGAAACCTTTAAGACTCGTGAAGCTATTCAGCATG AATCAGGAATCTTGGGA**C**CTTTACTTTATGGGGAAGTTGGAGA CACACTGTTGGTAAGTTGAAGAAAAGATTTAAGGT | 2164 |
| | ACCTTAAATCTTTTCTTCAACTTACCAACAGTGTGTCTCCAACT TCCCCATAAAGTAAAG**G**TCCCAAGATTCCTGATTCATGCTGAA TAGCTTCACGAGTCTTAAAGGTTTCATCTGTGTA | 2165 |
| | TCTTGGGA**C**CTTTACTT | 2166 |
| | AAGTAAAG**G**TCCCAAGA | 2167 |
| Haemophilia A Gly455Arg tGGG-AGG | ACCTTTAAGACTCGTGAAGCTATTCAGCATGAATCAGGAATCT TGGGACCTTTACTTTAT**G**GGGAAGTTGGAGACACACTGTTGG TAAGTTGAAGAAAAGATTTAAGGTCAGGTAAGAAGA | 2168 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TCTTCTTACCTGACCTTAAATCTTTTCTTCAACTTACCAACAGT GTGTCTCCAACTTCCCCATAAAGTAAAGGTCCCAAGATTCCTG ATTCATGCTGAATAGCTTCACGAGTCTTAAAGGT | 2169 |
| | TACTTTATGGGGAAGTT | 2170 |
| | AACTTCCCCATAAAGTA | 2171 |
| Haemophilia A Gly455Glu GGG-GAG | CCTTTAAGACTCGTGAAGCTATTCAGCATGAATCAGGAATCTT GGGACCTTTACTTTATGGGGAAGTTGGAGACACACTGTTGGT AAGTTGAAGAAAAGATTTAAGGTCAGGTAAGAAGAA | 2172 |
| | TTCTTCTTACCTGACCTTAAATCTTTTCTTCAACTTACCAACAG TGTGTCTCCAACTTCCCCATAAAGTAAAGGTCCCAAGATTCCT GATTCATGCTGAATAGCTTCACGAGTCTTAAAGG | 2173 |
| | ACTTTATGGGGAAGTTG | 2174 |
| | CAACTTCCCCATAAAGT | 2175 |
| Haemophilia A Asp459Asn aGAC-AAC | CGTGAAGCTATTCAGCATGAATCAGGAATCTTGGGACCTTTAC TTTATGGGGAAGTTGGAGACACACTGTTGGTAAGTTGAAGAA AAGATTTAAGGTCAGGTAAGAAGAAAAAGTCTGGAG | 2176 |
| | CTCCAGACTTTTTCTTCTTACCTGACCTTAAATCTTTTCTTCAA CTTACCAACAGTGTGTCTCCAACTTCCCCATAAAGTAAAGGTC CCAAGATTCCTGATTCATGCTGAATAGCTTCACG | 2177 |
| | AAGTTGGAGACACACTG | 2178 |
| | CAGTGTGTCTCCAACTT | 2179 |
| Haemophilia A Phe465Cys TTT-TGT | TGTTGATCCTAGTCGTTTTAGGATTTGATCTTAGATCTCGCTTA TACTTTCAGATTATATTTTAAGAATCAAGCAAGCAGACCATATAA CATCTACCCTCACGGAATCACTGATGTCCGTCC | 2180 |
| | GGACGGACATCAGTGATTCCGTGAGGGTAGATGTTATATGGT CTGCTTGCTTGATTCTTAAATATAATCTGAAAGTATAAGCGAG ATCTAAGATCAAATCCTAAAACGACTAGGATCAACA | 2181 |
| | GATTATATTTAAGAATC | 2182 |
| | GATTCTTAAATATAATC | 2183 |
| Haemophilia A Ala469Gly GCA-GGA | TCGTTTTAGGATTTGATCTTAGATCTCGCTTATACTTTCAGATT ATATTTAAGAATCAAGCAAGCAGACCATATAACATCTACCCTC ACGGAATCACTGATGTCCGTCCTTTGTATTCAAG | 2184 |
| | CTTGAATACAAAGGACGGACATCAGTGATTCCGTGAGGGTAG ATGTTATATGGTCTGCTTGCTTGATTCTTAAATATAATCTGAAA GTATAAGCGAGATCTAAGATCAAATCCTAAAACGA | 2185 |
| | GAATCAAGCAAGCAGAC | 2186 |
| | GTCTGCTTGCTTGATTC | 2187 |
| Haemophilia A Arg471Gly cAGA-GGA | TTAGGATTTGATCTTAGATCTCGCTTATACTTTCAGATTATATT TAAGAATCAAGCAAGCAGACCATATAACATCTACCCTCACGG AATCACTGATGTCCGTCCTTTGTATTCAAGGAGAT | 2188 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATCTCCTTGAATACAAAGGACGGACATCAGTGATTCCGTGAG GGTAGATGTTATATGGTCTGCTTGCTTGATTCTTAAATATAATC TGAAAGTATAAGCGAGATCTAAGATCAAATCCTAA | 2189 |
| | AAGCAAGCAGACCATAT | 2190 |
| | ATATGGTCTGCTTGCTT | 2191 |
| Haemophilia A Tyr473Cys TAT-TGT | TTGATCTTAGATCTCGCTTATACTTTCAGATTATATTTAAGAAT CAAGCAAGCAGACCATATAACATCTACCCTCACGGAATCACT GATGTCCGTCCTTTGTATTCAAGGAGATTACCAAA | 2192 |
| | TTTGGTAATCTCCTTGAATACAAAGGACGGACATCAGTGATTC CGTGAGGGTAGATGTTATATGGTCTGCTTGCTTGATTCTTAAA TATAATCTGAAAGTATAAGCGAGATCTAAGATCAA | 2193 |
| | CAGACCATATAACATCT | 2194 |
| | AGATGTTATATGGTCTG | 2195 |
| Haemophilia A Tyr473His aTAT-CAT | TTTGATCTTAGATCTCGCTTATACTTTCAGATTATATTTAAGAA TCAAGCAAGCAGACCATATAACATCTACCCTCACGGAATCACT GATGTCCGTCCTTTGTATTCAAGGAGATTACCAA | 2196 |
| | TTGGTAATCTCCTTGAATACAAAGGACGGACATCAGTGATTCC GTGAGGGTAGATGTTATATGGTCTGCTTGCTTGATTCTTAAAT ATAATCTGAAAGTATAAGCGAGATCTAAGATCAAA | 2197 |
| | GCAGACCATATAACATC | 2198 |
| | GATGTTATATGGTCTGC | 2199 |
| Haemophilia A Ile475Thr ATC-ACC | TTAGATCTCGCTTATACTTTCAGATTATATTTAAGAATCAAGCA AGCAGACCATATAACATCTACCCTCACGGAATCACTGATGTCC GTCCTTTGTATTCAAGGAGATTACCAAAAGGTAA | 2200 |
| | TTACCTTTTGGTAATCTCCTTGAATACAAAGGACGGACATCAG TGATTCCGTGAGGGTAGATGTTATATGGTCTGCTTGCTTGATT CTTAAATATAATCTGAAAGTATAAGCGAGATCTAA | 2201 |
| | ATATAACATCTACCCTC | 2202 |
| | GAGGGTAGATGTTATAT | 2203 |
| Haemophilia A Gly479Arg cGGA-AGA | TTATACTTTCAGATTATATTTAAGAATCAAGCAAGCAGACCATA TAACATCTACCCTCACGGAATCACTGATGTCCGTCCTTTGTAT TCAAGGAGATTACCAAAAGGTAAATATTCCCTCG | 2204 |
| | CGAGGGAATATTTACCTTTTGGTAATCTCCTTGAATACAAAGG ACGGACATCAGTGATTCCGTGAGGGTAGATGTTATATGGTCT GCTTGCTTGATTCTTAAATATAATCTGAAAGTATAA | 2205 |
| | ACCCTCACGGAATCACT | 2206 |
| | AGTGATTCCGTGAGGGT | 2207 |
| Haemophilia A Thr522Ser aACT-TCT | CCAATTCTGCCAGGAGAAATATTCAAATATAAATGGACAGTGA CTGTAGAAGATGGGCCAACTAAATCAGATCCTCGGTGCCTGA CCCGCTATTACTCTAGTTTCGTTAATATGGAGAGAG | 2208 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTCTCTCCATATTAACGAAACTAGAGTAATAGCGGGTCAGGC ACCGAGGATCTGATTTAGTTGGCCCATCTTCTACAGTCACTGT CCATTTATATTTGAATATTTCTCCTGGCAGAATTGG | 2209 |
| | ATGGGCCAACTAAATCA | 2210 |
| | TGATTTAGTTGGCCCAT | 2211 |
| Haemophilia A Asp525Asn aGAT-AAT | CCAGGAGAAATATTCAAATATAAATGGACAGTGACTGTAGAAG ATGGGCCAACTAAATCAGATCCTCGGTGCCTGACCCGCTATT ACTCTAGTTTCGTTAATATGGAGAGAGATCTAGCTT | 2212 |
| | AAGCTAGATCTCTCTCCATATTAACGAAACTAGAGTAATAGCG GGTCAGGCACCGAGGATCTGATTTAGTTGGCCCATCTTCTAC AGTCACTGTCCATTTATATTTGAATATTTCTCCTGG | 2213 |
| | CTAAATCAGATCCTCGG | 2214 |
| | CCGAGGATCTGATTTAG | 2215 |
| Haemophilia A Arg527Trp tCGG-TGG | GAAATATTCAAATATAAATGGACAGTGACTGTAGAAGATGGGC CAACTAAATCAGATCCTCGGTGCCTGACCCGCTATTACTCTA GTTTCGTTAATATGGAGAGAGATCTAGCTTCAGGAC | 2216 |
| | GTCCTGAAGCTAGATCTCTCTCCATATTAACGAAACTAGAGTA ATAGCGGGTCAGGCACCGAGGATCTGATTTAGTTGGCCCATC TTCTACAGTCACTGTCCATTTATATTTGAATATTTC | 2217 |
| | CAGATCCTCGGTGCCTG | 2218 |
| | CAGGCACCGAGGATCTG | 2219 |
| Haemophilia A Arg531Cys cCGC-TGC | TATAAATGGACAGTGACTGTAGAAGATGGGCCAACTAAATCA GATCCTCGGTGCCTGACCCGCTATTACTCTAGTTTCGTTAATA TGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTC | 2220 |
| | GAGGGCCAATGAGTCCTGAAGCTAGATCTCTCTCCATATTAA CGAAACTAGAGTAATAGCGGGTCAGGCACCGAGGATCTGATT TAGTTGGCCCATCTTCTACAGTCACTGTCCATTTATA | 2221 |
| | GCCTGACCCGCTATTAC | 2222 |
| | GTAATAGCGGGTCAGGC | 2223 |
| Haemophilia A Arg531Gly cCGC-GGC | TATAAATGGACAGTGACTGTAGAAGATGGGCCAACTAAATCA GATCCTCGGTGCCTGACCCGCTATTACTCTAGTTTCGTTAATA TGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTC | 2224 |
| | GAGGGCCAATGAGTCCTGAAGCTAGATCTCTCTCCATATTAA CGAAACTAGAGTAATAGCGGGTCAGGCACCGAGGATCTGATT TAGTTGGCCCATCTTCTACAGTCACTGTCCATTTATA | 2225 |
| | GCCTGACCCGCTATTAC | 2226 |
| | GTAATAGCGGGTCAGGC | 2227 |
| Haemophilia A Arg531His CGC-CAC | ATAAATGGACAGTGACTGTAGAAGATGGGCCAACTAAATCAG ATCCTCGGTGCCTGACCCGCTATTACTCTAGTTTCGTTAATAT GGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTCT | 2228 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGAGGGCCAATGAGTCCTGAAGCTAGATCTCTCTCCATATTAA CGAAACTAGAGTAATAGCGGGTCAGGCACCGAGGATCTGATT TAGTTGGCCCATCTTCTACAGTCACTGTCCATTTAT | 2229 |
| | CCTGACCCGCTATTACT | 2230 |
| | AGTAATAGCGGGTCAGG | 2231 |
| Haemophilia A Ser534Pro cTCT-CCT | ACAGTGACTGTAGAAGATGGGCCAACTAAATCAGATCCTCGG TGCCTGACCCGCTATTACTCTAGTTTCGTTAATATGGAGAGAG ATCTAGCTTCAGGACTCATTGGCCCTCTCCTCATCT | 2232 |
| | AGATGAGGAGAGGGCCAATGAGTCCTGAAGCTAGATCTCTCT CCATATTAACGAAACTAGAGTAATAGCGGGTCAGGCACCGAG GATCTGATTTAGTTGGCCCATCTTCTACAGTCACTGT | 2233 |
| | GCTATTACTCTAGTTTC | 2234 |
| | GAAACTAGAGTAATAGC | 2235 |
| Haemophilia A Ser535Gly tAGT-GGT | GTGACTGTAGAAGATGGGCCAACTAAATCAGATCCTCGGTGC CTGACCCGCTATTACTCTAGTTTCGTTAATATGGAGAGAGATC TAGCTTCAGGACTCATTGGCCCTCTCCTCATCTGCT | 2236 |
| | AGCAGATGAGGAGAGGGCCAATGAGTCCTGAAGCTAGATCTC TCTCCATATTAACGAAACTAGAGTAATAGCGGGTCAGGCACC GAGGATCTGATTTAGTTGGCCCATCTTCTACAGTCAC | 2237 |
| | ATTACTCTAGTTTCGTT | 2238 |
| | AACGAAACTAGAGTAAT | 2239 |
| Haemophilia A Val537Asp GTT-GAT | TAGAAGATGGGCCAACTAAATCAGATCCTCGGTGCCTGACCC GCTATTACTCTAGTTTCGTTAATATGGAGAGAGATCTAGCTTC AGGACTCATTGGCCCTCTCCTCATCTGCTACAAAGA | 2240 |
| | TCTTTGTAGCAGATGAGGAGAGGGCCAATGAGTCCTGAAGCT AGATCTCTCTCCATATTAACGAAACTAGAGTAATAGCGGGTCA GGCACCGAGGATCTGATTTAGTTGGCCCATCTTCTA | 2241 |
| | TAGTTTCGTTAATATGG | 2242 |
| | CCATATTAACGAAACTA | 2243 |
| Haemophilia A Arg541Thr AGA-ACA | CAACTAAATCAGATCCTCGGTGCCTGACCCGCTATTACTCTA GTTTCGTTAATATGGAGAGAGATCTAGCTTCAGGACTCATTGG CCCTCTCCTCATCTGCTACAAAGAATCTGTAGATCA | 2244 |
| | TGATCTACAGATTCTTTGTAGCAGATGAGGAGAGGGCCAATG AGTCCTGAAGCTAGATCTCTCTCCATATTAACGAAACTAGAGT AATAGCGGGTCAGGCACCGAGGATCTGATTTAGTTG | 2245 |
| | TATGGAGAGAGATCTAG | 2246 |
| | CTAGATCTCTCTCCATA | 2247 |
| Haemophilia A Asp542Gly GAT-GGT | CTAAATCAGATCCTCGGTGCCTGACCCGCTATTACTCTAGTTT CGTTAATATGGAGAGAGATCTAGCTTCAGGACTCATTGGCCC TCTCCTCATCTGCTACAAAGAATCTGTAGATCAAAG | 2248 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTTTGATCTACAGATTCTTTGTAGCAGATGAGGAGAGGGCCA ATGAGTCCTGAAGCTAGA**T**CTCTCTCCATATTAACGAAACTAG AGTAATAGCGGGTCAGGCACCGAGGATCTGATTTAG | 2249 |
| | GGAGAGAG**A**TCTAGCTT | 2250 |
| | AAGCTAGA**T**CTCTCTCC | 2251 |
| Haemophilia A Asp542His aGAT-CAT | ACTAAATCAGATCCTCGGTGCCTGACCCGCTATTACTCTAGTT TCGTTAATATGGAGAGA**G**ATCTAGCTTCAGGACTCATTGGCC CTCTCCTCATCTGCTACAAAGAATCTGTAGATCAAA | 2252 |
| | TTTGATCTACAGATTCTTTGTAGCAGATGAGGAGAGGGCCAAT GAGTCCTGAAGCTAGAT**C**TCTCTCCATATTAACGAAACTAGAG TAATAGCGGGTCAGGCACCGAGGATCTGATTTAGT | 2253 |
| | TGGAGAGA**G**ATCTAGCT | 2254 |
| | AGCTAGAT**C**TCTCTCCA | 2255 |
| Haemophilia A Asp542Tyr aGAT-TAT | ACTAAATCAGATCCTCGGTGCCTGACCCGCTATTACTCTAGTT TCGTTAATATGGAGAGA**G**ATCTAGCTTCAGGACTCATTGGCC CTCTCCTCATCTGCTACAAAGAATCTGTAGATCAAA | 2256 |
| | TTTGATCTACAGATTCTTTGTAGCAGATGAGGAGAGGGCCAAT GAGTCCTGAAGCTAGAT**C**TCTCTCCATATTAACGAAACTAGAG TAATAGCGGGTCAGGCACCGAGGATCTGATTTAGT | 2257 |
| | TGGAGAGA**G**ATCTAGCT | 2258 |
| | AGCTAGAT**C**TCTCTCCA | 2259 |
| Haemophilia A Glu557Term aGAA-TAA | GTTAATATGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCT CTCCTCATCTGCTACAAA**G**AATCTGTAGATCAAAGAGGAAACC AGGTGAGTTCTTGCCTTTCCAAGTGCTGGGTTTCAT | 2260 |
| | ATGAAACCCAGCACTTGGAAAGGCAAGAACTCACCTGGTTTC CTCTTTGATCTACAGATT**C**TTTGTAGCAGATGAGGAGAGGGC CAATGAGTCCTGAAGCTAGATCTCTCTCCATATTAAC | 2261 |
| | GCTACAAA**G**AATCTGTA | 2262 |
| | TACAGATT**C**TTTGTAGC | 2263 |
| Haemophilia A Ser558Phe TCT-TTT | ATATGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTCTCC TCATCTGCTACAAAGAAT**C**TGTAGATCAAAGAGGAAACCAGGT GAGTTCTTGCCTTTCCAAGTGCTGGGTTTCATTCTC | 2264 |
| | GAGAATGAAACCCAGCACTTGGAAAGGCAAGAACTCACCTGG TTTCCTCTTTGATCTACA**G**ATTCTTTGTAGCAGATGAGGAGAG GGCCAATGAGTCCTGAAGCTAGATCTCTCTCCATAT | 2265 |
| | CAAAGAAT**C**TGTAGATC | 2266 |
| | GATCTACA**G**ATTCTTTG | 2267 |
| Haemophilia A Val559Ala GTA-GCA | TGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTCTCCTCA TCTGCTACAAAGAATCTG**T**AGATCAAAGAGGAAACCAGGTGA GTTCTTGCCTTTCCAAGTGCTGGGTTTCATTCTCAGT | 2268 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACTGAGAATGAAACCCAGCACTTGGAAAGGCAAGAACTCACC TGGTTTCCTCTTTGATCTACAGATTCTTTGTAGCAGATGAGGA GAGGGCCAATGAGTCCTGAAGCTAGATCTCTCTCCA | 2269 |
| | AGAATCTGTAGATCAAA | 2270 |
| | TTTGATCTACAGATTCT | 2271 |

## EXAMPLE 14
## Hemophilia - Factor IX Deficiency

The attached table discloses the correcting oligonucleotide base sequences for the Factor IX oligonucleotides of the invention.

### Table 21
### Factor IX Mutations and Genome-Correcting Oligos

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Haemophilia B<br>Asn2Asp<br>tAAT-GAT | ATTTCAGTTTTTCTTGATCATGAAAACGCCAACAAAATTCTGAA TCGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTT CAAGGGAACCTTGAGAGAGAATGTATGGAAGAAA | 2272 |
| | TTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTCT TCCAATTTACCTGAATTATACCTCTTTGGCCGATTCAGAATTTT GTTGGCGTTTTCATGATCAAGAAAAACTGAAAT | 2273 |
| | AGAGGTATAATTCAGGT | 2274 |
| | ACCTGAATTATACCTCT | 2275 |
| Haemophilia B<br>Asn2Ile<br>AAT-ATT | TTTCAGTTTTTCTTGATCATGAAAACGCCAACAAAATTCTGAAT CGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTT CAAGGGAACCTTGAGAGAGAATGTATGGAAGAAAA | 2276 |
| | TTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTC TTCCAATTTACCTGAATTATACCTCTTTGGCCGATTCAGAATTT TGTTGGCGTTTTCATGATCAAGAAAAACTGAAA | 2277 |
| | GAGGTATAATTCAGGTA | 2278 |
| | TACCTGAATTATACCTC | 2279 |
| Haemophilia B<br>Asn2Tyr<br>tAAT-TAT | ATTTCAGTTTTTCTTGATCATGAAAACGCCAACAAAATTCTGAA TCGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTT CAAGGGAACCTTGAGAGAGAATGTATGGAAGAAA | 2280 |
| | TTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTCT TCCAATTTACCTGAATTATACCTCTTTGGCCGATTCAGAATTTT GTTGGCGTTTTCATGATCAAGAAAAACTGAAAT | 2281 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGAGGTATAATTCAGGT | 2282 |
| | ACCTGAATTATACCTCT | 2283 |
| Haemophilia B<br>Ser3Pro<br>tTCA-CCA | TCAGTTTTTCTTGATCATGAAAACGCCAACAAAATTCTGAATC<br>GGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTCA<br>AGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGT | 2284 |
| | ACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAAC<br>TCTTCCAATTTACCTGAATTATACCTCTTTGGCCGATTCAGAA<br>TTTTGTTGGCGTTTTCATGATCAAGAAAAACTGA | 2285 |
| | GGTATAATTCAGGTAAA | 2286 |
| | TTTACCTGAATTATACC | 2287 |
| Haemophilia B<br>Gly4Asp<br>GGT-GAT | TTTTTCTTGATCATGAAAACGCCAACAAAATTCTGAATCGGCC<br>AAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGG<br>AACCTTGAGAGAGAATGTATGGAAGAAAAGTGTAG | 2288 |
| | CTACACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAAC<br>AAACTCTTCCAATTTACCTGAATTATACCTCTTTGGCCGATTCA<br>GAATTTTGTTGGCGTTTTCATGATCAAGAAAAA | 2289 |
| | TAATTCAGGTAAATTGG | 2290 |
| | CCAATTTACCTGAATTA | 2291 |
| Haemophilia B<br>Gly4Ser<br>aGGT-AGT | GTTTTTCTTGATCATGAAAACGCCAACAAAATTCTGAATCGGC<br>CAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGG<br>GAACCTTGAGAGAGAATGTATGGAAGAAAAGTGTA | 2292 |
| | TACACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACA<br>AACTCTTCCAATTTACCTGAATTATACCTCTTTGGCCGATTCA<br>GAATTTTGTTGGCGTTTTCATGATCAAGAAAAAC | 2293 |
| | ATAATTCAGGTAAATTG | 2294 |
| | CAATTTACCTGAATTAT | 2295 |
| Haemophilia B<br>Lys5Glu<br>tAAA-GAA | TTTCTTGATCATGAAAACGCCAACAAAATTCTGAATCGGCCAA<br>AGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAA<br>CCTTGAGAGAGAATGTATGGAAGAAAAGTGTAGTT | 2296 |
| | AACTACACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGA<br>ACAAACTCTTCCAATTTACCTGAATTATACCTCTTTGGCCGATT<br>CAGAATTTTGTTGGCGTTTTCATGATCAAGAAA | 2297 |
| | ATTCAGGTAAATTGGAA | 2298 |
| | TTCCAATTTACCTGAAT | 2299 |
| Haemophilia B<br>Glu7Ala<br>GAA-GCA | ATCATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGAGGTA<br>TAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAG<br>AGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAGA | 2300 |
| | TCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAGGTT<br>CCCTTGAACAAACTCTTCCAATTTACCTGAATTATACCTCTTTG<br>GCCGATTCAGAATTTTGTTGGCGTTTTCATGAT | 2301 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TAAATTGGAAGAGTTTG | 2302 |
| | CAAACTCTTCCAATTTA | 2303 |
| Haemophilia B<br>Glu7Lys<br>gGAA-AAA | GATCATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGAGG<br>TATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTG<br>AGAGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAG | 2304 |
| | CTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAGGTTC<br>CCTTGAACAAACTCTTCCAATTTACCTGAATTATACCTCTTTGG<br>CCGATTCAGAATTTTGTTGGCGTTTTCATGATC | 2305 |
| | GTAAATTGGAAGAGTTT | 2306 |
| | AAACTCTTCCAATTTAC | 2307 |
| Haemophilia B<br>Glu7Val<br>GAA-GTA | ATCATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGAGGTA<br>TAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAG<br>AGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAGA | 2308 |
| | TCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAGGTT<br>CCCTTGAACAAACTCTTCCAATTTACCTGAATTATACCTCTTTG<br>GCCGATTCAGAATTTTGTTGGCGTTTTCATGAT | 2309 |
| | TAAATTGGAAGAGTTTG | 2310 |
| | CAAACTCTTCCAATTTA | 2311 |
| Haemophilia B<br>Glu8Ala<br>GAG-GCG | ATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGAGGTATAA<br>TTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAG<br>AGAATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGC | 2312 |
| | GCTTCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAG<br>GTTCCCTTGAACAAACTCTTCCAATTTACCTGAATTATACCTCT<br>TTGGCCGATTCAGAATTTTGTTGGCGTTTTCAT | 2313 |
| | ATTGGAAGAGTTTGTTC | 2314 |
| | GAACAAACTCTTCCAAT | 2315 |
| Haemophilia B<br>Glu8Gly<br>GAG-GGG | ATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGAGGTATAA<br>TTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAG<br>AGAATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGC | 2316 |
| | GCTTCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAG<br>GTTCCCTTGAACAAACTCTTCCAATTTACCTGAATTATACCTCT<br>TTGGCCGATTCAGAATTTTGTTGGCGTTTTCAT | 2317 |
| | ATTGGAAGAGTTTGTTC | 2318 |
| | GAACAAACTCTTCCAAT | 2319 |
| Haemophilia B<br>Phe9Cys<br>TTT-TGT | AAAACGCCAACAAAATTCTGAATCGGCCAAAGAGGTATAATTC<br>AGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAGA<br>ATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGCACG | 2320 |
| | CGTGCTTCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTC<br>AAGGTTCCCTTGAACAAACTCTTCCAATTTACCTGAATTATAC<br>CTCTTTGGCCGATTCAGAATTTTGTTGGCGTTTT | 2321 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GGAAGAGTTTGTTCAAG | 2322 |
| | CTTGAACAAACTCTTCC | 2323 |
| Haemophilia B<br>Phe9Ile<br>gTTT-ATT | GAAAACGCCAACAAAATTCTGAATCGGCCAAAGAGGTATAATT<br>CAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAG<br>AATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGCAC | 2324 |
| | GTGCTTCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCA<br>AGGTTCCCTTGAACAAACTCTTCCAATTTACCTGAATTATACC<br>TCTTTGGCCGATTCAGAATTTTGTTGGCGTTTTC | 2325 |
| | TGGAAGAGTTTGTTCAA | 2326 |
| | TTGAACAAACTCTTCCA | 2327 |
| Haemophilia B<br>Arg(-1)Ser<br>AGGt-AGC | TTACATTTCAGTTTTTCTTGATCATGAAAACGCCAACAAAATTC<br>TGAATCGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTT<br>TGTTCAAGGGAACCTTGAGAGAGAATGTATGGAA | 2328 |
| | TTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTCTTCC<br>AATTTACCTGAATTATACCTCTTTGGCCGATTCAGAATTTTGTT<br>GGCGTTTTCATGATCAAGAAAAACTGAAATGTAA | 2329 |
| | CCAAAGAGGTATAATTC | 2330 |
| | GAATTATACCTCTTTGG | 2331 |
| Haemophilia B<br>Arg(-1)Thr<br>AGG-ACG | TTTACATTTCAGTTTTTCTTGATCATGAAAACGCCAACAAAATT<br>CTGAATCGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAG<br>TTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGA | 2332 |
| | TCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTCTTCCA<br>ATTTACCTGAATTATACCTCTTTGGCCGATTCAGAATTTTGTTG<br>GCGTTTTCATGATCAAGAAAAACTGAAATGTAAA | 2333 |
| | GCCAAAGAGGTATAATT | 2334 |
| | AATTATACCTCTTTGGC | 2335 |
| Haemophilia B<br>Lys(-2)Asn<br>AAGa-AAT | CTTTTACATTTCAGTTTTTCTTGATCATGAAAACGCCAACAAAA<br>TTCTGAATCGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGA<br>GTTTGTTCAAGGGAACCTTGAGAGAGAATGTATG | 2336 |
| | CATACATTCTCTCTCAAGGTTCCCTTGAACAAACTCTTCCAAT<br>TTACCTGAATTATACCTCTTTGGCCGATTCAGAATTTTGTTGG<br>CGTTTTCATGATCAAGAAAAACTGAAATGTAAAAG | 2337 |
| | CGGCCAAAGAGGTATAA | 2338 |
| | TTATACCTCTTTGGCCG | 2339 |
| Haemophilia B<br>Arg(-4)Gln<br>CGG-CAG | AATTATTCTTTTACATTTCAGTTTTTCTTGATCATGAAAACGCC<br>AACAAAATTCTGAATCGGCCAAAGAGGTATAATTCAGGTAAAT<br>TGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAGA | 2340 |
| | TCTCTCTCAAGGTTCCCTTGAACAAACTCTTCCAATTTACCTG<br>AATTATACCTCTTTGGCCGATTCAGAATTTTGTTGGCGTTTTCA<br>TGATCAAGAAAAACTGAAATGTAAAAGAATAATT | 2341 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TCTGAATC**G**GCCAAAGA | 2342 |
| | TCTTTGGC**C**GATTCAGA | 2343 |
| Haemophilia B<br>Arg(-4)Leu<br>CGG-CTG | AATTATTCTTTTACATTTCAGTTTTTCTTGATCATGAAAACGCC<br>AACAAAATTCTGAATC**G**GCCAAAGAGGTATAATTCAGGTAAAT<br>TGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAGA | 2344 |
| | TCTCTCTCAAGGTTCCCTTGAACAAACTCTTCCAATTTACCTG<br>AATTATACCTCTTTGGC**C**GATTCAGAATTTTGTTGGCGTTTTCA<br>TGATCAAGAAAAACTGAAATGTAAAAGAATAATT | 2345 |
| | TCTGAATC**G**GCCAAAGA | 2346 |
| | TCTTTGGC**C**GATTCAGA | 2347 |
| Haemophilia B<br>Arg(-4)Trp<br>tCGG-TGG | GAATTATTCTTTTACATTTCAGTTTTTCTTGATCATGAAAACGC<br>CAACAAAATTCTGAAT**C**GGCCAAAGAGGTATAATTCAGGTAAA<br>TTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAG | 2348 |
| | CTCTCTCAAGGTTCCCTTGAACAAACTCTTCCAATTTACCTGA<br>ATTATACCTCTTTGGCC**G**ATTCAGAATTTTGTTGGCGTTTTCAT<br>GATCAAGAAAAACTGAAATGTAAAAGAATAATTC | 2349 |
| | TTCTGAAT**C**GGCCAAAG | 2350 |
| | CTTTGGCC**G**ATTCAGAA | 2351 |
| Haemophilia B<br>Gln11Term<br>tCAA-TAA | GCCAACAAAATTCTGAATCGGCCAAAGAGGTATAATTCAGGTA<br>AATTGGAAGAGTTTGTT**C**AAGGGAACCTTGAGAGAGAATGTAT<br>GGAAGAAAAGTGTAGTTTTGAAGAAGCACGAGAAG | 2352 |
| | CTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATACATTCT<br>CTCTCAAGGTTCCCTT**G**AACAAACTCTTCCAATTTACCTGAAT<br>TATACCTCTTTGGCCGATTCAGAATTTTGTTGGC | 2353 |
| | AGTTTGTT**C**AAGGGAAC | 2354 |
| | GTTCCCTT**G**AACAAACT | 2355 |
| Haemophilia B<br>Gly12Ala<br>GGG-GCG | ACAAAATTCTGAATCGGCCAAAGAGGTATAATTCAGGTAAATT<br>GGAAGAGTTTGTTCAAG**G**GAACCTTGAGAGAGAATGTATGGA<br>AGAAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTT | 2356 |
| | AAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATACA<br>TTCTCTCTCAAGGTTC**C**CTTGAACAAACTCTTCCAATTTACCT<br>GAATTATACCTCTTTGGCCGATTCAGAATTTTGT | 2357 |
| | TGTTCAAG**G**GAACCTTG | 2358 |
| | CAAGGTTC**C**CTTGAACA | 2359 |
| Haemophilia B<br>Gly12Arg<br>aGGG-AGG | AACAAAATTCTGAATCGGCCAAAGAGGTATAATTCAGGTAAAT<br>TGGAAGAGTTTGTTCAA**G**GGAACCTTGAGAGAGAATGTATGG<br>AAGAAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTT | 2360 |
| | AAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATACAT<br>TCTCTCTCAAGGTTCC**C**TTGAACAAACTCTTCCAATTTACCTG<br>AATTATACCTCTTTGGCCGATTCAGAATTTTGTT | 2361 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTGTTCAAGGGAACCTT | 2362 |
| | AAGGTTCCCTTGAACAA | 2363 |
| Haemophilia B<br>Gly12Glu<br>GGG-GAG | ACAAAATTCTGAATCGGCCAAAGAGGTATAATTCAGGTAAATT<br>GGAAGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGA<br>AGAAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTT | 2364 |
| | AAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATACA<br>TTCTCTCTCAAGGTTCCCTTGAACAAACTCTTCCAATTTACCT<br>GAATTATACCTCTTTGGCCGATTCAGAATTTTGT | 2365 |
| | TGTTCAAGGGAACCTTG | 2366 |
| | CAAGGTTCCCTTGAACA | 2367 |
| Haemophilia B<br>Glu17Gln<br>aGAA-CAA | CGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTC<br>AAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGTGTAGTT<br>TTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAA | 2368 |
| | TTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACAC<br>TTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTC<br>TTCCAATTTACCTGAATTATACCTCTTTGGCCG | 2369 |
| | TTGAGAGAGAATGTATG | 2370 |
| | CATACATTCTCTCTCAA | 2371 |
| Haemophilia B<br>Glu17Lys<br>aGAA-AAA | CGGCCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTC<br>AAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGTGTAGTT<br>TTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAA | 2372 |
| | TTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACAC<br>TTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAAACTC<br>TTCCAATTTACCTGAATTATACCTCTTTGGCCG | 2373 |
| | TTGAGAGAGAATGTATG | 2374 |
| | CATACATTCTCTCTCAA | 2375 |
| Haemophilia B<br>Cys18Arg<br>aTGT-CGT | CCAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTCAAG<br>GGAACCTTGAGAGAGAATTGTATGGAAGAAAAGTGTAGTTTTG<br>AAGAAGCACGAGAAGTTTTTGAAAACACTGAAAGAA | 2376 |
| | TTCTTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTA<br>CACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAA<br>ACTCTTCCAATTTACCTGAATTATACCTCTTTGG | 2377 |
| | AGAGAGAATTGTATGGAA | 2378 |
| | TTCCATACATTCTCTCT | 2379 |
| Haemophilia B<br>Cys18Tyr<br>TGT-TAT | CAAAGAGGTATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGG<br>GAACCTTGAGAGAGAATGTATGGAAGAAAAGTGTAGTTTTGAA<br>GAAGCACGAGAAGTTTTTGAAAACACTGAAAGAAC | 2380 |
| | GTTCTTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACT<br>ACACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTTGAACAA<br>ACTCTTCCAATTTACCTGAATTATACCTCTTTG | 2381 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GAGAGAATGTATGGAAG | 2382 |
| | CTTCCATACATTCTCTC | 2383 |
| Haemophilia B<br>Glu20Val<br>GAA-GTA | GGTATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCT<br>TGAGAGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGC<br>ACGAGAAGTTTTTGAAAACACTGAAAGAACAGTGAG | 2384 |
| | CTCACTGTTCTTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTC<br>AAAACTACACTTTTCTTCCATACATTCTCTCTCAAGGTTCCCTT<br>GAACAAACTCTTCCAATTTACCTGAATTATACC | 2385 |
| | ATGTATGGAAGAAAAGT | 2386 |
| | ACTTTTCTTCCATACAT | 2387 |
| Haemophilia B<br>Glu21Lys<br>aGAA-AAA | TATAATTCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTG<br>AGAGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGCAC<br>GAGAAGTTTTTGAAAACACTGAAAGAACAGTGAGTA | 2388 |
| | TACTCACTGTTCTTTCAGTGTTTTCAAAAACTTCTCGTGCTTCT<br>TCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAGGTTCCC<br>TTGAACAAACTCTTCCAATTTACCTGAATTATA | 2389 |
| | GTATGGAAGAAAAGTGT | 2390 |
| | ACACTTTTCTTCCATAC | 2391 |
| Haemophilia B<br>Cys23Arg<br>gTGT-CGT | TCAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGA<br>GAATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGCACGAGAA<br>GTTTTTGAAAACACTGAAAGAACAGTGAGTATTTCCA | 2392 |
| | TGGAAATACTCACTGTTCTTTCAGTGTTTTCAAAAACTTCTCGT<br>GCTTCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCAAG<br>GTTCCCTTGAACAAACTCTTCCAATTTACCTGA | 2393 |
| | AAGAAAAGTGTAGTTTT | 2394 |
| | AAAACTACACTTTTCTT | 2395 |
| Haemophilia B<br>Cys23Tyr<br>TGT-TAT | CAGGTAAATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAG<br>AATGTATGGAAGAAAAGTGTAGTTTTGAAGAAGCACGAGAAGT<br>TTTTGAAAACACTGAAAGAACAGTGAGTATTTCCAC | 2396 |
| | GTGGAAATACTCACTGTTCTTTCAGTGTTTTCAAAAACTTCTC<br>GTGCTTCTTCAAAACTACACTTTTCTTCCATACATTCTCTCTCA<br>AGGTTCCCTTGAACAAACTCTTCCAATTTACCTG | 2397 |
| | AGAAAAGTGTAGTTTTG | 2398 |
| | CAAAACTACACTTTTCT | 2399 |
| Haemophilia B<br>Phe25Ser<br>TTT-TCT | AATTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTAT<br>GGAAGAAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTTTGAA<br>AACACTGAAAGAACAGTGAGTATTTCCACATAATA | 2400 |
| | TATTATGTGGAAATACTCACTGTTCTTTCAGTGTTTTCAAAAAC<br>TTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATACATTCTC<br>TCTCAAGGTTCCCTTGAACAAACTCTTCCAATT | 2401 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GTGTAGTTTTGAAGAAG | 2402 |
| | CTTCTTCAAAACTACAC | 2403 |
| Haemophilia B<br>Glu26Gln<br>tGAA-CAA | TTGGAAGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTATG<br>GAAGAAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAA<br>ACACTGAAAGAACAGTGAGTATTTCCACATAATACC | 2404 |
| | GGTATTATGTGGAAATACTCACTGTTCTTTCAGTGTTTTCAAAA<br>ACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATACATTC<br>TCTCTCAAGGTTCCCTTGAACAAACTCTTCCAA | 2405 |
| | GTAGTTTTGAAGAAGCA | 2406 |
| | TGCTTCTTCAAAACTAC | 2407 |
| Haemophilia B<br>Glu27Ala<br>GAA-GCA | AAGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAAG<br>AAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACAC<br>TGAAAGAACAGTGAGTATTTCCACATAATACCCTTC | 2408 |
| | GAAGGGTATTATGTGGAAATACTCACTGTTCTTTCAGTGTTTT<br>CAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATA<br>CATTCTCTCTCAAGGTTCCCTTGAACAAACTCTT | 2409 |
| | TTTTGAAGAAGCACGAG | 2410 |
| | CTCGTGCTTCTTCAAAA | 2411 |
| Haemophilia B<br>Glu27Asp<br>GAAg-GAC | AGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAAGA<br>AAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACACT<br>GAAAGAACAGTGAGTATTTCCACATAATACCCTTCA | 2412 |
| | TGAAGGGTATTATGTGGAAATACTCACTGTTCTTTCAGTGTTT<br>TCAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCAT<br>ACATTCTCTCTCAAGGTTCCCTTGAACAAACTCT | 2413 |
| | TTTGAAGAAGCACGAGA | 2414 |
| | TCTCGTGCTTCTTCAAA | 2415 |
| Haemophilia B<br>Glu27Lys<br>aGAA-AAA | GAAGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAA<br>GAAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACA<br>CTGAAAGAACAGTGAGTATTTCCACATAATACCCTT | 2416 |
| | AAGGGTATTATGTGGAAATACTCACTGTTCTTTCAGTGTTTTC<br>AAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATAC<br>ATTCTCTCTCAAGGTTCCCTTGAACAAACTCTTC | 2417 |
| | GTTTTGAAGAAGCACGA | 2418 |
| | TCGTGCTTCTTCAAAAC | 2419 |
| Haemophilia B<br>Glu27Val<br>GAA-GTA | AAGAGTTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAAG<br>AAAAGTGTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACAC<br>TGAAAGAACAGTGAGTATTTCCACATAATACCCTTC | 2420 |
| | GAAGGGTATTATGTGGAAATACTCACTGTTCTTTCAGTGTTTT<br>CAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTTCCATA<br>CATTCTCTCTCAAGGTTCCCTTGAACAAACTCTT | 2421 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTTTGAAGAAGCACGAG | 2422 |
| | CTCGTGCTTCTTCAAAA | 2423 |
| Haemophilia B<br>Arg29Gln<br>CGA-CAA | TTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGT<br>GTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAAG<br>AACAGTGAGTATTTCCACATAATACCCTTCAGATGC | 2424 |
| | GCATCTGAAGGGTATTATGTGGAAATACTCACTGTTCTTTCAG<br>TGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCT<br>TCCATACATTCTCTCTCAAGGTTCCCTTGAACAA | 2425 |
| | AGAAGCACGAGAAGTTT | 2426 |
| | AAACTTCTCGTGCTTCT | 2427 |
| Haemophilia B<br>Arg29Pro<br>CGA-CCA | TTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGT<br>GTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAAG<br>AACAGTGAGTATTTCCACATAATACCCTTCAGATGC | 2428 |
| | GCATCTGAAGGGTATTATGTGGAAATACTCACTGTTCTTTCAG<br>TGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCT<br>TCCATACATTCTCTCTCAAGGTTCCCTTGAACAA | 2429 |
| | AGAAGCACGAGAAGTTT | 2430 |
| | AAACTTCTCGTGCTTCT | 2431 |
| Haemophilia B<br>Arg29Term<br>aCGA-TGA | TTTGTTCAAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGT<br>GTAGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAAG<br>AACAGTGAGTATTTCCACATAATACCCTTCAGATG | 2432 |
| | CATCTGAAGGGTATTATGTGGAAATACTCACTGTTCTTTCAGT<br>GTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTTCTT<br>CCATACATTCTCTCTCAAGGTTCCCTTGAACAAA | 2433 |
| | AAGAAGCACGAGAAGTT | 2434 |
| | AACTTCTCGTGCTTCTT | 2435 |
| Haemophilia B<br>Glu30Lys<br>aGAA-AAA | GTTCAAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGTGT<br>AGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAAGAA<br>CAGTGAGTATTTCCACATAATACCCTTCAGATGCAG | 2436 |
| | CTGCATCTGAAGGGTATTATGTGGAAATACTCACTGTTCTTTC<br>AGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTT<br>CTTCCATACATTCTCTCTCAAGGTTCCCTTGAAC | 2437 |
| | AAGCACGAGAAGTTTTT | 2438 |
| | AAAAACTTCTCGTGCTT | 2439 |
| Haemophilia B<br>Glu30Term<br>aGAA-TAA | GTTCAAGGGAACCTTGAGAGAGAATGTATGGAAGAAAAGTGT<br>AGTTTTGAAGAAGCACGAGAAGTTTTTGAAAACACTGAAAGAA<br>CAGTGAGTATTTCCACATAATACCCTTCAGATGCAG | 2440 |
| | CTGCATCTGAAGGGTATTATGTGGAAATACTCACTGTTCTTTC<br>AGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAACTACACTTTT<br>CTTCCATACATTCTCTCTCAAGGTTCCCTTGAAC | 2441 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AAGCACGAGAAGTTTTT | 2442 |
| | AAAAACTTCTCGTGCTT | 2443 |
| Haemophilia B<br>Glu33Asp<br>GAAa-GAC | CCTTGAGAGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAGAA<br>GCACGAGAAGTTTTTGAAAACACTGAAAGAACAGTGAGTATTT<br>CCACATAATACCCTTCAGATGCAGAGCATAGAATA | 2444 |
| | TATTCTATGCTCTGCATCTGAAGGGTATTATGTGGAAATACTC<br>ACTGTTCTTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAA<br>ACTACACTTTTCTTCCATACATTCTCTCTCAAGG | 2445 |
| | GTTTTTGAAAACACTGA | 2446 |
| | TCAGTGTTTTCAAAAAC | 2447 |
| Haemophilia B<br>Glu33Term<br>tGAA-TAA | AACCTTGAGAGAGAATGTATGGAAGAAAAGTGTAGTTTTGAAG<br>AAGCACGAGAAGTTTTTGAAAACACTGAAAGAACAGTGAGTAT<br>TTCCACATAATACCCTTCAGATGCAGAGCATAGAA | 2448 |
| | TTCTATGCTCTGCATCTGAAGGGTATTATGTGGAAATACTCAC<br>TGTTCTTTCAGTGTTTTCAAAAACTTCTCGTGCTTCTTCAAAAC<br>TACACTTTTCTTCCATACATTCTCTCTCAAGGTT | 2449 |
| | AAGTTTTTGAAAACACT | 2450 |
| | AGTGTTTTCAAAAACTT | 2451 |
| Haemophilia B<br>Trp42Term<br>TGG-TAG | CAAAACACTTTAGATATTACCGTTAATTTGTCTTCTTTTATTCTT<br>TATAGACTGAATTTTGGAAGCAGTATGTTGGTAAGCAATTCAT<br>TTTATCCTCTAGCTAATATATGAAACATATGAG | 2452 |
| | CTCATATGTTTCATATATTAGCTAGAGGATAAAATGAATTGCTT<br>ACCAACATACTGCTTCCAAAATTCAGTCTATAAAGAATAAAAG<br>AAGACAAATTAACGGTAATATCTAAAGTGTTTTG | 2453 |
| | TGAATTTTGGAAGCAGT | 2454 |
| | ACTGCTTCCAAAATTCA | 2455 |
| Haemophilia B<br>Lys43Glu<br>gAAG-GAG | AAACACTTTAGATATTACCGTTAATTTGTCTTCTTTTATTCTTTA<br>TAGACTGAATTTTGGAAGCAGTATGTTGGTAAGCAATTCATTT<br>TATCCTCTAGCTAATATATGAAACATATGAGAA | 2456 |
| | TTCTCATATGTTTCATATATTAGCTAGAGGATAAAATGAATTGC<br>TTACCAACATACTGCTTCCAAAATTCAGTCTATAAAGAATAAAA<br>GAAGACAAATTAACGGTAATATCTAAAGTGTTT | 2457 |
| | AATTTTGGAAGCAGTAT | 2458 |
| | ATACTGCTTCCAAAATT | 2459 |
| Haemophilia B<br>Gln44Term<br>gCAG-TAG | CACTTTAGATATTACCGTTAATTTGTCTTCTTTTATTCTTTATAG<br>ACTGAATTTTGGAAGCAGTATGTTGGTAAGCAATTCATTTTATC<br>CTCTAGCTAATATATGAAACATATGAGAATTA | 2460 |
| | TAATTCTCATATGTTTCATATATTAGCTAGAGGATAAAATGAAT<br>TGCTTACCAACATACTGCTTCCAAAATTCAGTCTATAAAGAATA<br>AAAGAAGACAAATTAACGGTAATATCTAAAGTG | 2461 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTTGGAAGCAGTATGTT | 2462 |
| | AACATACTGCTTCCAAA | 2463 |
| Haemophilia B<br>Asp49Gly<br>GAT-GGT | CCGGGCATTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAAC<br>CTATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTA<br>AATGGCGGCAGTTGCAAGGATGACATTAATTCCTA | 2464 |
| | TAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAACATG<br>GATTGGACTCACACTGATCTCCATCTTTGAGATAGGTTAAGAA<br>ATTGAATTGGCACGTAAACTGCTTAGAATGCCCGG | 2465 |
| | AGATGGAGATCAGTGTG | 2466 |
| | CACACTGATCTCCATCT | 2467 |
| Haemophilia B<br>Gln50His<br>CAGt-CAC | GCATTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCTATC<br>TCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGG<br>CGGCAGTTGCAAGGATGACATTAATTCCTATGAA | 2468 |
| | TTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAA<br>CATGGATTGGACTCACACTGATCTCCATCTTTGAGATAGGTTA<br>AGAAATTGAATTGGCACGTAAACTGCTTAGAATGC | 2469 |
| | GGAGATCAGTGTGAGTC | 2470 |
| | GACTCACACTGATCTCC | 2471 |
| Haemophilia B<br>Gln50Pro<br>CAG-CCG | GGCATTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCTA<br>TCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAAT<br>GGCGGCAGTTGCAAGGATGACATTAATTCCTATGA | 2472 |
| | TCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAAC<br>ATGGATTGGACTCACACTGATCTCCATCTTTGAGATAGGTTAA<br>GAAATTGAATTGGCACGTAAACTGCTTAGAATGCC | 2473 |
| | TGGAGATCAGTGTGAGT | 2474 |
| | ACTCACACTGATCTCCA | 2475 |
| Haemophilia B<br>Gln50Term<br>tCAG-TAG | GGGCATTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCT<br>ATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAA<br>TGGCGGCAGTTGCAAGGATGACATTAATTCCTATG | 2476 |
| | CATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAACA<br>TGGATTGGACTCACACTGATCTCCATCTTTGAGATAGGTTAAG<br>AAATTGAATTGGCACGTAAACTGCTTAGAATGCCC | 2477 |
| | ATGGAGATCAGTGTGAG | 2478 |
| | CTCACACTGATCTCCAT | 2479 |
| Haemophilia B<br>Cys51Arg<br>gTGT-CGT | CATTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCTATCT<br>CAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGG<br>CGGCAGTTGCAAGGATGACATTAATTCCTATGAAT | 2480 |
| | ATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAA<br>ACATGGATTGGACTCACACTGATCTCCATCTTTGAGATAGGTT<br>AAGAAATTGAATTGGCACGTAAACTGCTTAGAATG | 2481 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GAGATCAGTGTGAGTCC | 2482 |
| | GGACTCACACTGATCTC | 2483 |
| Haemophilia B<br>Cys51Ser<br>gTGT-AGT | CATTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCTATCT<br>CAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGG<br>CGGCAGTTGCAAGGATGACATTAATTCCTATGAAT | 2484 |
| | ATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAA<br>ACATGGATTGGACTCACACTGATCTCCATCTTTGAGATAGGTT<br>AAGAAATTGAATTGGCACGTAAACTGCTTAGAATG | 2485 |
| | GAGATCAGTGTGAGTCC | 2486 |
| | GGACTCACACTGATCTC | 2487 |
| Haemophilia B<br>Cys51Trp<br>TGTg-TGG | TTCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCTATCTCA<br>AAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGGCG<br>GCAGTTGCAAGGATGACATTAATTCCTATGAATGT | 2488 |
| | ACATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTT<br>AAACATGGATTGGACTCACACTGATCTCCATCTTTGAGATAGG<br>TTAAGAAATTGAATTGGCACGTAAACTGCTTAGAA | 2489 |
| | GATCAGTGTGAGTCCAA | 2490 |
| | TTGGACTCACACTGATC | 2491 |
| Haemophilia B<br>Glu52Term<br>tGAG-TAG | TCTAAGCAGTTTACGTGCCAATTCAATTTCTTAACCTATCTCAA<br>AGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGGCGG<br>CAGTTGCAAGGATGACATTAATTCCTATGAATGTT | 2492 |
| | AACATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATT<br>TAAACATGGATTGGACTCACACTGATCTCCATCTTTGAGATAG<br>GTTAAGAAATTGAATTGGCACGTAAACTGCTTAGA | 2493 |
| | ATCAGTGTGAGTCCAAT | 2494 |
| | ATTGGACTCACACTGAT | 2495 |
| Haemophilia B<br>Pro55Ala<br>tCCA-GCA | TTTACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAG<br>ATCAGTGTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCA<br>AGGATGACATTAATTCCTATGAATGTTGGTGTCCCT | 2496 |
| | AGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCAACT<br>GCCGCCATTTAAACATGGATTGGACTCACACTGATCTCCATCT<br>TTGAGATAGGTTAAGAAATTGAATTGGCACGTAAA | 2497 |
| | AGTCCAATCCATGTTTA | 2498 |
| | TAAACATGGATTGGACT | 2499 |
| Haemophilia B<br>Pro55Arg<br>CCA-CGA | TTACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGA<br>TCAGTGTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAA<br>GGATGACATTAATTCCTATGAATGTTGGTGTCCCTT | 2500 |
| | AAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCAAC<br>TGCCGCCATTTAAACATGGATTGGACTCACACTGATCTCCATC<br>TTTGAGATAGGTTAAGAAATTGAATTGGCACGTAA | 2501 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GTCCAATC**C**ATGTTTAA | 2502 |
| | TTAAACAT**G**GATTGGAC | 2503 |
| Haemophilia B<br>Pro55Gln<br>CCA-CAA | TTACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGA<br>TCAGTGTGAGTCCAATC**C**ATGTTTAAATGGCGGCAGTTGCAA<br>GGATGACATTAATTCCTATGAATGTTGGTGTCCCTT | 2504 |
| | AAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCAAC<br>TGCCGCCATTTAAACAT**G**GATTGGACTCACACTGATCTCCATC<br>TTTGAGATAGGTTAAGAAATTGAATTGGCACGTAA | 2505 |
| | GTCCAATC**C**ATGTTTAA | 2506 |
| | TTAAACAT**G**GATTGGAC | 2507 |
| Haemophilia B<br>Pro55Leu<br>CCA-CTA | TTACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGA<br>TCAGTGTGAGTCCAATC**C**ATGTTTAAATGGCGGCAGTTGCAA<br>GGATGACATTAATTCCTATGAATGTTGGTGTCCCTT | 2508 |
| | AAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCAAC<br>TGCCGCCATTTAAACAT**G**GATTGGACTCACACTGATCTCCATC<br>TTTGAGATAGGTTAAGAAATTGAATTGGCACGTAA | 2509 |
| | GTCCAATC**C**ATGTTTAA | 2510 |
| | TTAAACAT**G**GATTGGAC | 2511 |
| Haemophilia B<br>Pro55Ser<br>tCCA-TCA | TTTACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAG<br>ATCAGTGTGAGTCCAAT**C**CATGTTTAAATGGCGGCAGTTGCA<br>AGGATGACATTAATTCCTATGAATGTTGGTGTCCCT | 2512 |
| | AGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCAACT<br>GCCGCCATTTAAACATG**G**ATTGGACTCACACTGATCTCCATCT<br>TTGAGATAGGTTAAGAAATTGAATTGGCACGTAAA | 2513 |
| | AGTCCAAT**C**CATGTTTA | 2514 |
| | TAAACATG**G**ATTGGACT | 2515 |
| Haemophilia B<br>Cys56Arg<br>aTGT-CGT | ACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGATC<br>AGTGTGAGTCCAATCCA**T**GTTTAAATGGCGGCAGTTGCAAGG<br>ATGACATTAATTCCTATGAATGTTGGTGTCCCTTTG | 2516 |
| | CAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCA<br>ACTGCCGCCATTTAAAC**A**TGGATTGGACTCACACTGATCTCC<br>ATCTTTGAGATAGGTTAAGAAATTGAATTGGCACGT | 2517 |
| | CCAATCCA**T**GTTTAAAT | 2518 |
| | ATTTAAAC**A**TGGATTGG | 2519 |
| Haemophilia B<br>Cys56Ser<br>aTGT-AGT | ACGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGATC<br>AGTGTGAGTCCAATCCA**T**GTTTAAATGGCGGCAGTTGCAAGG<br>ATGACATTAATTCCTATGAATGTTGGTGTCCCTTTG | 2520 |
| | CAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGCA<br>ACTGCCGCCATTTAAAC**A**TGGATTGGACTCACACTGATCTCC<br>ATCTTTGAGATAGGTTAAGAAATTGAATTGGCACGT | 2521 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCAATCCATGTTTAAAT | 2522 |
| | ATTTAAACATGGATTGG | 2523 |
| Haemophilia B<br>Cys56Ser<br>TGT-TCT | CGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGATCA<br>GTGTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGA<br>TGACATTAATTCCTATGAATGTTGGTGTCCCTTTGG | 2524 |
| | CCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGC<br>AACTGCCGCCATTTAAACATGGATTGGACTCACACTGATCTCC<br>ATCTTTGAGATAGGTTAAGAAATTGAATTGGCACG | 2525 |
| | CAATCCATGTTTAAATG | 2526 |
| | CATTTAAACATGGATTG | 2527 |
| Haemophilia B<br>Cys56Tyr<br>TGT-TAT | CGTGCCAATTCAATTTCTTAACCTATCTCAAAGATGGAGATCA<br>GTGTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGA<br>TGACATTAATTCCTATGAATGTTGGTGTCCCTTTGG | 2528 |
| | CCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGC<br>AACTGCCGCCATTTAAACATGGATTGGACTCACACTGATCTCC<br>ATCTTTGAGATAGGTTAAGAAATTGAATTGGCACG | 2529 |
| | CAATCCATGTTTAAATG | 2530 |
| | CATTTAAACATGGATTG | 2531 |
| Haemophilia B<br>Asn58Lys<br>AATg-AAG | ATTCAATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAG<br>TCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTA<br>ATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAA | 2532 |
| | TTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTCA<br>TCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCACACT<br>GATCTCCATCTTTGAGATAGGTTAAGAAATTGAAT | 2533 |
| | TGTTTAAATGGCGGCAG | 2534 |
| | CTGCCGCCATTTAAACA | 2535 |
| Haemophilia B<br>Gly59Asp<br>GGC-GAC | TCAATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGTC<br>CAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAAT<br>TCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGG | 2536 |
| | CCTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGT<br>CATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCACA<br>CTGATCTCCATCTTTGAGATAGGTTAAGAAATTGA | 2537 |
| | TTTAAATGGCGGCAGTT | 2538 |
| | AACTGCCGCCATTTAAA | 2539 |
| Haemophilia B<br>Gly59Val<br>GGC-GTC | TCAATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGTC<br>CAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAAT<br>TCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGG | 2540 |
| | CCTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGT<br>CATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCACA<br>CTGATCTCCATCTTTGAGATAGGTTAAGAAATTGA | 2541 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTTAAATGGCGGCAGTT | 2542 |
| | AACTGCCGCCATTTAAA | 2543 |
| Haemophilia B<br>Gly59Ser<br>tGGC-AGC | TTCAATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGT<br>CCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAA<br>TTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAG | 2544 |
| | CTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTC<br>ATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCACAC<br>TGATCTCCATCTTTGAGATAGGTTAAGAAATTGAA | 2545 |
| | GTTTAAATGGCGGCAGT | 2546 |
| | ACTGCCGCCATTTAAAC | 2547 |
| Haemophilia B<br>Gly60Ser<br>cGGC-AGC | AATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGTCCA<br>ATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAATTC<br>CTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAA | 2548 |
| | TTCCTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAAT<br>GTCATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCA<br>CACTGATCTCCATCTTTGAGATAGGTTAAGAAATT | 2549 |
| | TAAATGGCGGCAGTTGC | 2550 |
| | GCAACTGCCGCCATTTA | 2551 |
| Haemophilia B<br>Gly60Cys<br>cGGC-TGC | AATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGTCCA<br>ATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAATTC<br>CTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAA | 2552 |
| | TTCCTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAAT<br>GTCATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCA<br>CACTGATCTCCATCTTTGAGATAGGTTAAGAAATT | 2553 |
| | TAAATGGCGGCAGTTGC | 2554 |
| | GCAACTGCCGCCATTTA | 2555 |
| Haemophilia B<br>Gly60Asp<br>GGC-GAC | ATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGTCCAA<br>TCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAATTCC<br>TATGAATGTTGGTGTCCCTTTGGATTTGAAGGAAA | 2556 |
| | TTTCCTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAA<br>TGTCATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTC<br>ACACTGATCTCCATCTTTGAGATAGGTTAAGAAAT | 2557 |
| | AAATGGCGGCAGTTGCA | 2558 |
| | TGCAACTGCCGCCATTT | 2559 |
| Haemophilia B<br>Gly60Arg<br>cGGC-CGC | AATTTCTTAACCTATCTCAAAGATGGAGATCAGTGTGAGTCCA<br>ATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAATTC<br>CTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAA | 2560 |
| | TTCCTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAAT<br>GTCATCCTTGCAACTGCCGCCATTTAAACATGGATTGGACTCA<br>CACTGATCTCCATCTTTGAGATAGGTTAAGAAATT | 2561 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TAAATGGCGGCAGTTGC | 2562 |
| | GCAACTGCCGCCATTTA | 2563 |
| Haemophilia B<br>Cys62Tyr<br>TGC-TAC | TAACCTATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATG<br>TTTAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAA<br>TGTTGGTGTCCCTTTGGATTTGAAGGAAAGAACTG | 2564 |
| | CAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAGG<br>AATTAATGTCATCCTTGCAACTGCCGCCATTTAAACATGGATT<br>GGACTCACACTGATCTCCATCTTTGAGATAGGTTA | 2565 |
| | CGGCAGTTGCAAGGATG | 2566 |
| | CATCCTTGCAACTGCCG | 2567 |
| Haemophilia B<br>Cys62Ser<br>TGC-TCC | TAACCTATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATG<br>TTTAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAA<br>TGTTGGTGTCCCTTTGGATTTGAAGGAAAGAACTG | 2568 |
| | CAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAGG<br>AATTAATGTCATCCTTGCAACTGCCGCCATTTAAACATGGATT<br>GGACTCACACTGATCTCCATCTTTGAGATAGGTTA | 2569 |
| | CGGCAGTTGCAAGGATG | 2570 |
| | CATCCTTGCAACTGCCG | 2571 |
| Haemophilia B<br>Cys62Term<br>TGCa-TGA | AACCTATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGT<br>TTAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAAT<br>GTTGGTGTCCCTTTGGATTTGAAGGAAAGAACTGT | 2572 |
| | ACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAG<br>GAATTAATGTCATCCTTGCAACTGCCGCCATTTAAACATGGAT<br>TGGACTCACACTGATCTCCATCTTTGAGATAGGTT | 2573 |
| | GGCAGTTGCAAGGATGA | 2574 |
| | TCATCCTTGCAACTGCC | 2575 |
| Haemophilia B<br>Asp64Glu<br>GATg-GAG | TCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAAT<br>GGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTTGG<br>TGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATTA | 2576 |
| | TAATTCACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACAT<br>TCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAAC<br>ATGGATTGGACTCACACTGATCTCCATCTTTGAGA | 2577 |
| | TGCAAGGATGACATTAA | 2578 |
| | TTAATGTCATCCTTGCA | 2579 |
| Haemophilia B<br>Asp64Gly<br>GAT-GGT | ATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAA<br>TGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTTG<br>GTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATT | 2580 |
| | AATTCACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATT<br>CATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAACA<br>TGGATTGGACTCACACTGATCTCCATCTTTGAGAT | 2581 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTGCAAGGATGACATTA | 2582 |
| | TAATGTCATCCTTGCAA | 2583 |
| Haemophilia B<br>Asp64Asn<br>gGAT-AAT | TATCTCAAAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAA<br>ATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTTG<br>GTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAAT | 2584 |
| | ATTCACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTC<br>ATAGGAATTAATGTCATCCTTGCAACTGCCGCCATTTAAACAT<br>GGATTGGACTCACACTGATCTCCATCTTTGAGATA | 2585 |
| | GTTGCAAGGATGACATT | 2586 |
| | AATGTCATCCTTGCAAC | 2587 |
| Haemophilia B<br>Ile66Ser<br>ATT-AGT | AAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGGCG<br>GCAGTTGCAAGGATGACATTAATTCCTATGAATGTTGGTGTCC<br>CTTTGGATTTGAAGGAAAGAACTGTGAATTAGGTAA | 2588 |
| | TTACCTAATTCACAGTTCTTTCCTTCAAATCCAAAGGGACACC<br>AACATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATT<br>TAAACATGGATTGGACTCACACTGATCTCCATCTT | 2589 |
| | GGATGACATTAATTCCT | 2590 |
| | AGGAATTAATGTCATCC | 2591 |
| Haemophilia B<br>Ile66Thr<br>ATT-ACT | AAGATGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGGCG<br>GCAGTTGCAAGGATGACATTAATTCCTATGAATGTTGGTGTCC<br>CTTTGGATTTGAAGGAAAGAACTGTGAATTAGGTAA | 2592 |
| | TTACCTAATTCACAGTTCTTTCCTTCAAATCCAAAGGGACACC<br>AACATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCCATT<br>TAAACATGGATTGGACTCACACTGATCTCCATCTT | 2593 |
| | GGATGACATTAATTCCT | 2594 |
| | AGGAATTAATGTCATCC | 2595 |
| Haemophilia B<br>Asn67Lys<br>AATt-AAA | TGGAGATCAGTGTGAGTCCAATCCATGTTTAAATGGCGGCAG<br>TTGCAAGGATGACATTAATTCCTATGAATGTTGGTGTCCCTTT<br>GGATTTGAAGGAAAGAACTGTGAATTAGGTAAGTAA | 2596 |
| | TTACTTACCTAATTCACAGTTCTTTCCTTCAAATCCAAAGGGAC<br>ACCAACATTCATAGGAATTAATGTCATCCTTGCAACTGCCGCC<br>ATTTAAACATGGATTGGACTCACACTGATCTCCA | 2597 |
| | GACATTAATTCCTATGA | 2598 |
| | TCATAGGAATTAATGTC | 2599 |
| Haemophilia B<br>Tyr69Cys<br>TAT-TGT | ATCAGTGTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCA<br>AGGATGACATTAATTCCTATGAATGTTGGTGTCCCTTTGGATT<br>TGAAGGAAAGAACTGTGAATTAGGTAAGTAACTATT | 2600 |
| | AATAGTTACTTACCTAATTCACAGTTCTTTCCTTCAAATCCAAA<br>GGGACACCAACATTCATAGGAATTAATGTCATCCTTGCAACTG<br>CCGCCATTTAAACATGGATTGGACTCACACTGAT | 2601 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TAATTCCTATGAATGTT | 2602 |
| | AACATTCATAGGAATTA | 2603 |
| Haemophilia B<br>Cys71Term<br>TGTt-TGA | TGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGA<br>CATTAATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGA<br>AAGAACTGTGAATTAGGTAAGTAACTATTTTTTGAA | 2604 |
| | TTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCTTCAA<br>ATCCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTT<br>GCAACTGCCGCCATTTAAACATGGATTGGACTCA | 2605 |
| | TATGAATGTTGGTGTCC | 2606 |
| | GGACACCAACATTCATA | 2607 |
| Haemophilia B<br>Cys71Ser<br>TGT-TCT | GTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATG<br>ACATTAATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGG<br>AAAGAACTGTGAATTAGGTAAGTAACTATTTTTTGA | 2608 |
| | TCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCTTCAAA<br>TCCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTG<br>CAACTGCCGCCATTTAAACATGGATTGGACTCAC | 2609 |
| | CTATGAATGTTGGTGTC | 2610 |
| | GACACCAACATTCATAG | 2611 |
| Haemophilia B<br>Cys71Tyr<br>TGT-TAT | GTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATG<br>ACATTAATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGG<br>AAAGAACTGTGAATTAGGTAAGTAACTATTTTTTGA | 2612 |
| | TCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCTTCAAA<br>TCCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTG<br>CAACTGCCGCCATTTAAACATGGATTGGACTCAC | 2613 |
| | CTATGAATGTTGGTGTC | 2614 |
| | GACACCAACATTCATAG | 2615 |
| Haemophilia B<br>Cys71Ser<br>aTGT-AGT | TGTGAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGAT<br>GACATTAATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAG<br>GAAAGAACTGTGAATTAGGTAAGTAACTATTTTTTG | 2616 |
| | CAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCTTCAAAT<br>CCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCTTGC<br>AACTGCCGCCATTTAAACATGGATTGGACTCACA | 2617 |
| | CCTATGAATGTTGGTGT | 2618 |
| | ACACCAACATTCATAGG | 2619 |
| Haemophilia B<br>Trp72Arg<br>tTGG-AGG | GAGTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGAC<br>ATTAATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAA<br>AGAACTGTGAATTAGGTAAGTAACTATTTTTTGAAT | 2620 |
| | ATTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCTTCA<br>AATCCAAAGGGACACCAACATTCATAGGAATTAATGTCATCCT<br>TGCAACTGCCGCCATTTAAACATGGATTGGACTC | 2621 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATGAATGTTGGTGTCCC | 2622 |
| | GGGACACCAACATTCAT | 2623 |
| Haemophilia B<br>Trp72Term<br>TGGt-TGA | GTCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACAT<br>TAATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAAAG<br>AACTGTGAATTAGGTAAGTAACTATTTTTTGAATAC | 2624 |
| | GTATTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCTT<br>CAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTCATC<br>CTTGCAACTGCCGCCATTTAAACATGGATTGGAC | 2625 |
| | GAATGTTGGTGTCCCTT | 2626 |
| | AAGGGACACCAACATTC | 2627 |
| Haemophilia B<br>Cys73Tyr<br>TGT-TAT | CCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAA<br>TTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAAAGAAC<br>TGTGAATTAGGTAAGTAACTATTTTTTGAATACTC | 2628 |
| | GAGTATTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCC<br>TTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTCA<br>TCCTTGCAACTGCCGCCATTTAAACATGGATTGG | 2629 |
| | ATGTTGGTGTCCCTTTG | 2630 |
| | CAAAGGGACACCAACAT | 2631 |
| Haemophilia B<br>Cys73Arg<br>gTGT-CGT | TCCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTA<br>ATTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAAAGAA<br>CTGTGAATTAGGTAAGTAACTATTTTTTGAATACT | 2632 |
| | AGTATTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCCT<br>TCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTCAT<br>CCTTGCAACTGCCGCCATTTAAACATGGATTGGA | 2633 |
| | AATGTTGGTGTCCCTTT | 2634 |
| | AAAGGGACACCAACATT | 2635 |
| Haemophilia B<br>Cys73Phe<br>TGT-TTT | CCAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAA<br>TTCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAAAGAAC<br>TGTGAATTAGGTAAGTAACTATTTTTTGAATACTC | 2636 |
| | GAGTATTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTCC<br>TTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTCA<br>TCCTTGCAACTGCCGCCATTTAAACATGGATTGG | 2637 |
| | ATGTTGGTGTCCCTTTG | 2638 |
| | CAAAGGGACACCAACAT | 2639 |
| Haemophilia B<br>Cys73Term<br>TGTc-TGA | CAATCCATGTTTAAATGGCGGCAGTTGCAAGGATGACATTAAT<br>TCCTATGAATGTTGGTGTCCCTTTGGATTTGAAGGAAAGAACT<br>GTGAATTAGGTAAGTAACTATTTTTTGAATACTCA | 2640 |
| | TGAGTATTCAAAAAATAGTTACTTACCTAATTCACAGTTCTTTC<br>CTTCAAATCCAAAGGGACACCAACATTCATAGGAATTAATGTC<br>ATCCTTGCAACTGCCGCCATTTAAACATGGATTG | 2641 |
| | TGTTGGTGTCCCTTTGG | 2642 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCAAAGGGACACCAACA | 2643 |
| Haemophilia B<br>Gly76Val<br>GGA-GTA | GTTTAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGA<br>ATGTTGGTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATTA<br>GGTAAGTAACTATTTTTTGAATACTCATGGTTCAA | 2644 |
| | TTGAACCATGAGTATTCAAAAAATAGTTACTTACCTAATTCACA<br>GTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAGGAA<br>TTAATGTCATCCTTGCAACTGCCGCCATTTAAAC | 2645 |
| | TCCCTTTGGATTTGAAG | 2646 |
| | CTTCAAATCCAAAGGGA | 2647 |
| Haemophilia B<br>Gly76Arg<br>tGGA-AGA | TGTTTAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATG<br>AATGTTGGTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATT<br>AGGTAAGTAACTATTTTTTGAATACTCATGGTTCA | 2648 |
| | TGAACCATGAGTATTCAAAAAATAGTTACTTACCTAATTCACAG<br>TTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAGGAAT<br>TAATGTCATCCTTGCAACTGCCGCCATTTAAACA | 2649 |
| | GTCCCTTTGGATTTGAA | 2650 |
| | TTCAAATCCAAAGGGAC | 2651 |
| Haemophilia B<br>Phe77Cys<br>TTT-TGT | TAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATG<br>TTGGTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATTAGGT<br>AAGTAACTATTTTTTGAATACTCATGGTTCAAAGT | 2652 |
| | ACTTTGAACCATGAGTATTCAAAAAATAGTTACTTACCTAATTC<br>ACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAG<br>GAATTAATGTCATCCTTGCAACTGCCGCCATTTA | 2653 |
| | CTTTGGATTTGAAGGAA | 2654 |
| | TTCCTTCAAATCCAAAG | 2655 |
| Haemophilia B<br>Phe77Ser<br>TTT-TCT | TAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATG<br>TTGGTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATTAGGT<br>AAGTAACTATTTTTTGAATACTCATGGTTCAAAGT | 2656 |
| | ACTTTGAACCATGAGTATTCAAAAAATAGTTACTTACCTAATTC<br>ACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAG<br>GAATTAATGTCATCCTTGCAACTGCCGCCATTTA | 2657 |
| | CTTTGGATTTGAAGGAA | 2658 |
| | TTCCTTCAAATCCAAAG | 2659 |
| Haemophilia B<br>Phe77Tyr<br>TTT-TAT | TAAATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATG<br>TTGGTGTCCCTTTGGATTTGAAGGAAAGAACTGTGAATTAGGT<br>AAGTAACTATTTTTTGAATACTCATGGTTCAAAGT | 2660 |
| | ACTTTGAACCATGAGTATTCAAAAAATAGTTACTTACCTAATTC<br>ACAGTTCTTTCCTTCAAATCCAAAGGGACACCAACATTCATAG<br>GAATTAATGTCATCCTTGCAACTGCCGCCATTTA | 2661 |
| | CTTTGGATTTGAAGGAA | 2662 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTCCTTCA**A**ATCCAAAG | 2663 |
| Haemophilia B<br>Glu78Lys<br>tGAA-AAA | AATGGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTT<br>GGTGTCCCTTTGGATTT**G**AAGGAAAGAACTGTGAATTAGGTAA<br>GTAACTATTTTTTGAATACTCATGGTTCAAAGTTT | 2664 |
| | AAACTTTGAACCATGAGTATTCAAAAAATAGTTACTTACCTAAT<br>TCACAGTTCTTTCCTT**C**AAATCCAAAGGGACACCAACATTCAT<br>AGGAATTAATGTCATCCTTGCAACTGCCGCCATT | 2665 |
| | TTGGATTT**G**AAGGAAAG | 2666 |
| | CTTTCCTT**C**AAATCCAA | 2667 |
| Haemophilia B<br>Gly79Val<br>GGA-GTA | GCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTTGGT<br>GTCCCTTTGGATTTGAAG**G**AAAGAACTGTGAATTAGGTAAGTA<br>ACTATTTTTTGAATACTCATGGTTCAAAGTTTCCCT | 2668 |
| | AGGGAAACTTTGAACCATGAGTATTCAAAAAATAGTTACTTAC<br>CTAATTCACAGTTCTTT**C**CTTCAAATCCAAAGGGACACCAACA<br>TTCATAGGAATTAATGTCATCCTTGCAACTGCCGC | 2669 |
| | ATTTGAAG**G**AAAGAACT | 2670 |
| | AGTTCTTT**C**CTTCAAAT | 2671 |
| Haemophilia B<br>Gly79Arg<br>aGGA-AGA | GGCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTTGG<br>TGTCCCTTTGGATTTGAA**G**GAAAGAACTGTGAATTAGGTAAGT<br>AACTATTTTTTGAATACTCATGGTTCAAAGTTTCCC | 2672 |
| | GGGAAACTTTGAACCATGAGTATTCAAAAAATAGTTACTTACC<br>TAATTCACAGTTCTTTC**C**TTCAAATCCAAAGGGACACCAACAT<br>TCATAGGAATTAATGTCATCCTTGCAACTGCCGCC | 2673 |
| | GATTTGAA**G**GAAAGAAC | 2674 |
| | GTTCTTTC**C**TTCAAATC | 2675 |
| Haemophilia B<br>Gly79Glu<br>GGA-GAA | GCGGCAGTTGCAAGGATGACATTAATTCCTATGAATGTTGGT<br>GTCCCTTTGGATTTGAAG**G**AAAGAACTGTGAATTAGGTAAGTA<br>ACTATTTTTTGAATACTCATGGTTCAAAGTTTCCCT | 2676 |
| | AGGGAAACTTTGAACCATGAGTATTCAAAAAATAGTTACTTAC<br>CTAATTCACAGTTCTTT**C**CTTCAAATCCAAAGGGACACCAACA<br>TTCATAGGAATTAATGTCATCCTTGCAACTGCCGC | 2677 |
| | ATTTGAAG**G**AAAGAACT | 2678 |
| | AGTTCTTT**C**CTTCAAAT | 2679 |
| Haemophilia B<br>Cys88Ser<br>TGT-TCT | TTAGAAATGCATGTTAAATGATGCTGTTACTGTCTATTTTGCTT<br>CTTTTAGATGTAACAT**G**TAACATTAAGAATGGCAGATGCGAGC<br>AGTTTTGTAAAAATAGTGCTGATAACAAGGTGGT | 2680 |
| | ACCACCTTGTTATCAGCACTATTTTTACAAAACTGCTCGCATC<br>TGCCATTCTTAATGTTA**C**ATGTTACATCTAAAAGAAGCAAAATA<br>GACAGTAACAGCATCATTTAACATGCATTTCTAA | 2681 |
| | TGTAACAT**G**TAACATTA | 2682 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TAATGTTACATGTTACA | 2683 |
| Haemophilia B<br>Cys88Phe<br>TGT-TTT | TTAGAAATGCATGTTAAATGATGCTGTTACTGTCTATTTTGCTT<br>CTTTTAGATGTAACATGTAACATTAAGAATGGCAGATGCGAGC<br>AGTTTTGTAAAAATAGTGCTGATAACAAGGTGGT | 2684 |
| | ACCACCTTGTTATCAGCACTATTTTTACAAAACTGCTCGCATC<br>TGCCATTCTTAATGTTACATGTTACATCTAAAAGAAGCAAAATA<br>GACAGTAACAGCATCATTTAACATGCATTTCTAA | 2685 |
| | TGTAACATGTAACATTA | 2686 |
| | TAATGTTACATGTTACA | 2687 |
| Haemophilia B<br>Cys88Arg<br>aTGT-CGT | TTTAGAAATGCATGTTAAATGATGCTGTTACTGTCTATTTTGCT<br>TCTTTTAGATGTAACATGTAACATTAAGAATGGCAGATGCGAG<br>CAGTTTTGTAAAAATAGTGCTGATAACAAGGTGG | 2688 |
| | CCACCTTGTTATCAGCACTATTTTTACAAAACTGCTCGCATCT<br>GCCATTCTTAATGTTACATGTTACATCTAAAAGAAGCAAAATA<br>GACAGTAACAGCATCATTTAACATGCATTTCTAAA | 2689 |
| | ATGTAACATGTAACATT | 2690 |
| | AATGTTACATGTTACAT | 2691 |
| Haemophilia B<br>Cys88Tyr<br>TGT-TAT | TTAGAAATGCATGTTAAATGATGCTGTTACTGTCTATTTTGCTT<br>CTTTTAGATGTAACATGTAACATTAAGAATGGCAGATGCGAGC<br>AGTTTTGTAAAAATAGTGCTGATAACAAGGTGGT | 2692 |
| | ACCACCTTGTTATCAGCACTATTTTTACAAAACTGCTCGCATC<br>TGCCATTCTTAATGTTACATGTTACATCTAAAAGAAGCAAAATA<br>GACAGTAACAGCATCATTTAACATGCATTTCTAA | 2693 |
| | TGTAACATGTAACATTA | 2694 |
| | TAATGTTACATGTTACA | 2695 |
| Haemophilia B<br>Ile90Thr<br>ATT-ACT | ATGCATGTTAAATGATGCTGTTACTGTCTATTTTGCTTCTTTTA<br>GATGTAACATGTAACATTAAGAATGGCAGATGCGAGCAGTTTT<br>GTAAAAATAGTGCTGATAACAAGGTGGTTTGCTC | 2696 |
| | GAGCAAACCACCTTGTTATCAGCACTATTTTTACAAAACTGCT<br>CGCATCTGCCATTCTTAATGTTACATGTTACATCTAAAAGAAG<br>CAAAATAGACAGTAACAGCATCATTTAACATGCAT | 2697 |
| | ATGTAACATTAAGAATG | 2698 |
| | CATTCTTAATGTTACAT | 2699 |
| Haemophilia B<br>Asn92His<br>gAAT-CAT | TGTTAAATGATGCTGTTACTGTCTATTTTGCTTCTTTTAGATGT<br>AACATGTAACATTAAGAATGGCAGATGCGAGCAGTTTTGTAAA<br>AATAGTGCTGATAACAAGGTGGTTTGCTCCTGTA | 2700 |
| | TACAGGAGCAAACCACCTTGTTATCAGCACTATTTTTACAAAA<br>CTGCTCGCATCTGCCATTCTTAATGTTACATGTTACATCTAAAA<br>GAAGCAAAATAGACAGTAACAGCATCATTTAACA | 2701 |
| | ACATTAAGAATGGCAGA | 2702 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TCTGCCATTCTTAATGT | 2703 |
| Haemophilia B<br>Asn92Lys<br>AATg-AAA | TTAAATGATGCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAA<br>CATGTAACATTAAGAATGGCAGATGCGAGCAGTTTTGTAAAAA<br>TAGTGCTGATAACAAGGTGGTTTGCTCCTGTACT | 2704 |
| | AGTACAGGAGCAAACCACCTTGTTATCAGCACTATTTTTACAA<br>AACTGCTCGCATCTGCCATTCTTAATGTTACATGTTACATCTA<br>AAAGAAGCAAAATAGACAGTAACAGCATCATTTAA | 2705 |
| | ATTAAGAATGGCAGATG | 2706 |
| | CATCTGCCATTCTTAAT | 2707 |
| Haemophilia B<br>Gly93Asp<br>GGC-GAC | AAATGATGCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAACA<br>TGTAACATTAAGAATGGCAGATGCGAGCAGTTTTGTAAAAATA<br>GTGCTGATAACAAGGTGGTTTGCTCCTGTACTGA | 2708 |
| | TCAGTACAGGAGCAAACCACCTTGTTATCAGCACTATTTTTAC<br>AAAACTGCTCGCATCTGCCATTCTTAATGTTACATGTTACATCT<br>AAAAGAAGCAAAATAGACAGTAACAGCATCATTT | 2709 |
| | TAAGAATGGCAGATGCG | 2710 |
| | CGCATCTGCCATTCTTA | 2711 |
| Haemophilia B<br>Gly93Ser<br>tGGC-AGC | TAAATGATGCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAAC<br>ATGTAACATTAAGAATGGCAGATGCGAGCAGTTTTGTAAAAAT<br>AGTGCTGATAACAAGGTGGTTTGCTCCTGTACTG | 2712 |
| | CAGTACAGGAGCAAACCACCTTGTTATCAGCACTATTTTTACA<br>AAACTGCTCGCATCTGCCATTCTTAATGTTACATGTTACATCTA<br>AAAGAAGCAAAATAGACAGTAACAGCATCATTTA | 2713 |
| | TTAAGAATGGCAGATGC | 2714 |
| | GCATCTGCCATTCTTAA | 2715 |
| Haemophilia B<br>Arg94Ser<br>AGAt-AGT | GATGCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAACATGTA<br>ACATTAAGAATGGCAGATGCGAGCAGTTTTGTAAAAATAGTGC<br>TGATAACAAGGTGGTTTGCTCCTGTACTGAGGGA | 2716 |
| | TCCCTCAGTACAGGAGCAAACCACCTTGTTATCAGCACTATTT<br>TTACAAAACTGCTCGCATCTGCCATTCTTAATGTTACATGTTAC<br>ATCTAAAAGAAGCAAAATAGACAGTAACAGCATC | 2717 |
| | AATGGCAGATGCGAGCA | 2718 |
| | TGCTCGCATCTGCCATT | 2719 |
| Haemophilia B<br>Cys95Tyr<br>TGC-TAC | TGCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAACATGTAAC<br>ATTAAGAATGGCAGATGCGAGCAGTTTTGTAAAAATAGTGCTG<br>ATAACAAGGTGGTTTGCTCCTGTACTGAGGGATA | 2720 |
| | TATCCCTCAGTACAGGAGCAAACCACCTTGTTATCAGCACTAT<br>TTTTACAAAACTGCTCGCATCTGCCATTCTTAATGTTACATGTT<br>ACATCTAAAAGAAGCAAAATAGACAGTAACAGCA | 2721 |
| | TGGCAGATGCGAGCAGT | 2722 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACTGCTCG**C**ATCTGCCA | 2723 |
| Haemophilia B<br>Cys95Trp<br>TGCg-TGG | GCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAACATGTAACA<br>TTAAGAATGGCAGATG**C**GAGCAGTTTTGTAAAAATAGTGCTGA<br>TAACAAGGTGGTTTGCTCCTGTACTGAGGGATAT | 2724 |
| | ATATCCCTCAGTACAGGAGCAAACCACCTTGTTATCAGCACTA<br>TTTTTACAAAACTGCTC**G**CATCTGCCATTCTTAATGTTACATGT<br>TACATCTAAAAGAAGCAAAATAGACAGTAACAGC | 2725 |
| | GGCAGATG**C**GAGCAGTT | 2726 |
| | AACTGCTC**G**CATCTGCC | 2727 |
| Haemophilia B<br>Cys95Term<br>TGCg-TGA | GCTGTTACTGTCTATTTTGCTTCTTTTAGATGTAACATGTAACA<br>TTAAGAATGGCAGATG**C**GAGCAGTTTTGTAAAAATAGTGCTGA<br>TAACAAGGTGGTTTGCTCCTGTACTGAGGGATAT | 2728 |
| | ATATCCCTCAGTACAGGAGCAAACCACCTTGTTATCAGCACTA<br>TTTTTACAAAACTGCTC**G**CATCTGCCATTCTTAATGTTACATGT<br>TACATCTAAAAGAAGCAAAATAGACAGTAACAGC | 2729 |
| | GGCAGATG**C**GAGCAGTT | 2730 |
| | AACTGCTC**G**CATCTGCC | 2731 |
| Haemophilia B<br>Gln97Pro<br>CAG-CCG | TACTGTCTATTTTGCTTCTTTTAGATGTAACATGTAACATTAAG<br>AATGGCAGATGCGAGC**A**GTTTTGTAAAAATAGTGCTGATAACA<br>AGGTGGTTTGCTCCTGTACTGAGGGATATCGACT | 2732 |
| | AGTCGATATCCCTCAGTACAGGAGCAAACCACCTTGTTATCA<br>GCACTATTTTTACAAAAC**T**GCTCGCATCTGCCATTCTTAATGTT<br>ACATGTTACATCTAAAAGAAGCAAAATAGACAGTA | 2733 |
| | ATGCGAGC**A**GTTTTGTA | 2734 |
| | TACAAAAC**T**GCTCGCAT | 2735 |
| Haemophilia B<br>Gln97Glu<br>gCAG-GAG | TTACTGTCTATTTTGCTTCTTTTAGATGTAACATGTAACATTAA<br>GAATGGCAGATGCGAG**C**AGTTTTGTAAAAATAGTGCTGATAAC<br>AAGGTGGTTTGCTCCTGTACTGAGGGATATCGAC | 2736 |
| | GTCGATATCCCTCAGTACAGGAGCAAACCACCTTGTTATCAG<br>CACTATTTTTACAAAACT**G**CTCGCATCTGCCATTCTTAATGTTA<br>CATGTTACATCTAAAAGAAGCAAAATAGACAGTAA | 2737 |
| | GATGCGAG**C**AGTTTTGT | 2738 |
| | ACAAAACT**G**CTCGCATC | 2739 |
| Haemophilia B<br>Cys99Arg<br>tTGT-CGT | TCTATTTTGCTTCTTTTAGATGTAACATGTAACATTAAGAATGG<br>CAGATGCGAGCAGTTT**T**GTAAAAATAGTGCTGATAACAAGGTG<br>GTTTGCTCCTGTACTGAGGGATATCGACTTGCAG | 2740 |
| | CTGCAAGTCGATATCCCTCAGTACAGGAGCAAACCACCTTGT<br>TATCAGCACTATTTTTAC**A**AAACTGCTCGCATCTGCCATTCTT<br>AATGTTACATGTTACATCTAAAAGAAGCAAAATAGA | 2741 |
| | AGCAGTTT**T**GTAAAAAT | 2742 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATTTTTACAAAACTGCT | 2743 |
| Haemophilia B<br>Cys99Tyr<br>TGT-TAT | CTATTTTGCTTCTTTTAGATGTAACATGTAACATTAAGAATGGC<br>AGATGCGAGCAGTTTTGTAAAAATAGTGCTGATAACAAGGTG<br>GTTTGCTCCTGTACTGAGGGATATCGACTTGCAGA | 2744 |
| | TCTGCAAGTCGATATCCCTCAGTACAGGAGCAAACCACCTTG<br>TTATCAGCACTATTTTTACAAAACTGCTCGCATCTGCCATTCTT<br>AATGTTACATGTTACATCTAAAAGAAGCAAAATAG | 2745 |
| | GCAGTTTTGTAAAAATA | 2746 |
| | TATTTTTACAAAACTGC | 2747 |
| Warfarin sensitivity<br>Ala(-10)Thr<br>cGCC-ACC | TTTTTTGCTAAAACTAAAGAATTATTCTTTTACATTTCAGTTTTT<br>CTTGATCATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGA<br>GGTATAATTCAGGTAAATTGGAAGAGTTTGTTC | 2748 |
| | GAACAAACTCTTCCAATTTACCTGAATTATACCTCTTTGGCCG<br>ATTCAGAATTTTGTTGGCGTTTTCATGATCAAGAAAAACTGAAA<br>TGTAAAAGAATAATTCTTTAGTTTTAGCAAAAAA | 2749 |
| | ATGAAAACGCCAACAAA | 2750 |
| | TTTGTTGGCGTTTTCAT | 2751 |
| Warfarin sensitivity<br>Ala(-10)Val<br>GCC-GTC | TTTTTGCTAAAACTAAAGAATTATTCTTTTACATTTCAGTTTTTC<br>TTGATCATGAAAACGCCAACAAAATTCTGAATCGGCCAAAGAG<br>GTATAATTCAGGTAAATTGGAAGAGTTTGTTCA | 2752 |
| | TGAACAAACTCTTCCAATTTACCTGAATTATACCTCTTTGGCC<br>GATTCAGAATTTTGTTGGCGTTTTCATGATCAAGAAAAACTGA<br>AATGTAAAAGAATAATTCTTTAGTTTTAGCAAAAA | 2753 |
| | TGAAAACGCCAACAAAA | 2754 |
| | TTTTGTTGGCGTTTTCA | 2755 |
| Haemophilia B<br>Gly(-26)Val<br>GGA-GTA | TGCAGCGCGTGAACATGATCATGGCAGAATCACCAGGCCTCA<br>TCACCATCTGCCTTTTAGGATATCTACTCAGTGCTGAATGTAC<br>AGGTTTGTTTCCTTTTTTAAAATACATTGAGTATGC | 2756 |
| | GCATACTCAATGTATTTTAAAAAAGGAAACAAACCTGTACATTC<br>AGCACTGAGTAGATATCCTAAAAGGCAGATGGTGATGAGGCC<br>TGGTGATTCTGCCATGATCATGTTCACGCGCTGCA | 2757 |
| | CCTTTTAGGATATCTAC | 2758 |
| | GTAGATATCCTAAAAGG | 2759 |
| Haemophilia B<br>Leu(-27)Term<br>TTA-TAA | TTATGCAGCGCGTGAACATGATCATGGCAGAATCACCAGGCC<br>TCATCACCATCTGCCTTTTAGGATATCTACTCAGTGCTGAATG<br>TACAGGTTTGTTTCCTTTTTTAAAATACATTGAGTA | 2760 |
| | TACTCAATGTATTTTAAAAAAGGAAACAAACCTGTACATTCAGC<br>ACTGAGTAGATATCCTAAAAGGCAGATGGTGATGAGGCCTGG<br>TGATTCTGCCATGATCATGTTCACGCGCTGCATAA | 2761 |
| | CTGCCTTTTAGGATATC | 2762 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GATATCCTAAAAGGCAG | 2763 |
| Haemophilia B<br>Ile(-30)Asn<br>ATC-AAC | TAGCAAAGGTTATGCAGCGCGTGAACATGATCATGGCAGAAT<br>CACCAGGCCTCATCACCATCTGCCTTTTAGGATATCTACTCAG<br>TGCTGAATGTACAGGTTTGTTTCCTTTTTTAAAATA | 2764 |
| | TATTTTAAAAAAGGAAACAAACCTGTACATTCAGCACTGAGTA<br>GATATCCTAAAAGGCAGATGGTGATGAGGCCTGGTGATTCTG<br>CCATGATCATGTTCACGCGCTGCATAACCTTTGCTA | 2765 |
| | CATCACCATCTGCCTTT | 2766 |
| | AAAGGCAGATGGTGATG | 2767 |
| Haemophilia B<br>Ile(-40)Phe<br>gATC-TTC | ACTAATCGACCTTACCACTTTCACAATCTGCTAGCAAAGGTTA<br>TGCAGCGCGTGAACATGATCATGGCAGAATCACCAGGCCTCA<br>TCACCATCTGCCTTTTAGGATATCTACTCAGTGCTG | 2768 |
| | CAGCACTGAGTAGATATCCTAAAAGGCAGATGGTGATGAGGC<br>CTGGTGATTCTGCCATGATCATGTTCACGCGCTGCATAACCTT<br>TGCTAGCAGATTGTGAAAGTGGTAAGGTCGATTAGT | 2769 |
| | TGAACATGATCATGGCA | 2770 |
| | TGCCATGATCATGTTCA | 2771 |
| Haemophilia B<br>Arg(-44)His<br>CGC-CAC | ACTTTGGTACAACTAATCGACCTTACCACTTTCACAATCTGCT<br>AGCAAAGGTTATGCAGCGCGTGAACATGATCATGGCAGAATC<br>ACCAGGCCTCATCACCATCTGCCTTTTAGGATATCT | 2772 |
| | AGATATCCTAAAAGGCAGATGGTGATGAGGCCTGGTGATTCT<br>GCCATGATCATGTTCACGCGCTGCATAACCTTTGCTAGCAGA<br>TTGTGAAAGTGGTAAGGTCGATTAGTTGTACCAAAGT | 2773 |
| | TATGCAGCGCGTGAACA | 2774 |
| | TGTTCACGCGCTGCATA | 2775 |

## EXAMPLE 15
## Alpha thalassemia - Hemoglobin alpha locus 1

The thalassemia syndromes are a heterogeneous group of inherited anemias characterized by defects in the synthesis of one or more globin chain subunits. For example, beta-thalassemia discussed in Example 6, is caused by a decrease in beta-chain production relative to alpha-chain production; the converse is the case for alpha-thalassemia. The attached table discloses the correcting oligonucleotide base sequences for the hemoglobin alpha locus 1 oligonucleotides of the invention.

**Table 22**
**HBA1 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Thalassaemia alpha<br>Met(-1)Val<br>cATG-GTG | CCCTGGCGCGCTCGCGGCCCGGCACTCTTCTGGTCCCCACA<br>GACTCAGAGAGAACCCACC**A**TGGTGCTGTCTCCTGCCGACA<br>AGACCAACGTCAAGGCCGCCTGGGGTAAGGTCGGCGCGC | 2776 |
| | GCGCGCCGACCTTACCCCAGGCGGCCTTGACGTTGGTCTTG<br>TCGGCAGGAGACAGCACCA**T**GGTGGGTTCTCTCTGAGTCTGT<br>GGGGACCAGAAGAGTGCCGGGCCGCGAGCGCGCCAGGG | 2777 |
| | AACCCACC**A**TGGTGCTG | 2778 |
| | CAGCACCA**T**GGTGGGTT | 2779 |
| Haemoglobin variant<br>Ala12Asp<br>GCC-GAC | CACAGACTCAGAGAGAACCCACCATGGTGCTGTCTCCTGCC<br>GACAAGACCAACGTCAAGG**C**CGCCTGGGGTAAGGTCGGCGC<br>GCACGCTGGCGAGTATGGTGCGGAGGCCCTGGAGAGGTG | 2780 |
| | CACCTCTCCAGGGCCTCCGCACCATACTCGCCAGCGTGCGC<br>GCCGACCTTACCCCAGGCG**G**CCTTGACGTTGGTCTTGTCGG<br>CAGGAGACAGCACCATGGTGGGTTCTCTCTGAGTCTGTG | 2781 |
| | CGTCAAGG**C**CGCCTGGG | 2782 |
| | CCCAGGCG**G**CCTTGACG | 2783 |
| Haemoglobin variant<br>Gly15Asp<br>GGT-GAT | AGAGAGAACCCACCATGGTGCTGTCTCCTGCCGACAAGACCA<br>ACGTCAAGGCCGCCTGGG**G**TAAGGTCGGCGCGCACGCTGG<br>CGAGTATGGTGCGGAGGCCCTGGAGAGGTGAGGCTCCCT | 2784 |
| | AGGGAGCCTCACCTCTCCAGGGCCTCCGCACCATACTCGCC<br>AGCGTGCGCGCCGACCTTA**C**CCCAGGCGGCCTTGACGTTGG<br>TCTTGTCGGCAGGAGACAGCACCATGGTGGGTTCTCTCT | 2785 |
| | CGCCTGGG**G**TAAGGTCG | 2786 |
| | CGACCTTA**C**CCCAGGCG | 2787 |
| Haemoglobin variant<br>Tyr24Cys<br>TAT-TGT | CTGCCGACAAGACCAACGTCAAGGCCGCCTGGGGTAAGGTC<br>GGCGCGCACGCTGGCGAGT**A**TGGTGCGGAGGCCCTGGAGA<br>GGTGAGGCTCCCTCCCCTGCTCCGACCCGGGCTCCTCGCC | 2788 |
| | GGCGAGGAGCCCGGGTCGGAGCAGGGGAGGGAGCCTCACC<br>TCTCCAGGGCCTCCGCACCA**T**ACTCGCCAGCGTGCGCGCCG<br>ACCTTACCCCAGGCGGCCTTGACGTTGGTCTTGTCGGCAG | 2789 |
| | TGGCGAGT**A**TGGTGCGG | 2790 |
| | CCGCACCA**T**ACTCGCCA | 2791 |
| Haemoglobin variant<br>Glu27Asp<br>GAGg-GAT | GACCAACGTCAAGGCCGCCTGGGGTAAGGTCGGCGCGCAC<br>GCTGGCGAGTATGGTGCGGA**G**GCCCTGGAGAGGTGAGGCT<br>CCCTCCCCTGCTCCGACCCGGGCTCCTCGCCCGCCCGGAC<br>C | 2792 |
| | GGTCCGGGCGGGCGAGGAGCCCGGGTCGGAGCAGGGGAG<br>GGAGCCTCACCTCTCCAGGGC**C**TCCGCACCATACTCGCCAG<br>CGTGCGCGCCGACCTTACCCCAGGCGGCCTTGACGTTGGTC | 2793 |
| | GGTGCGGA**G**GCCCTGGA | 2794 |
| | TCCAGGGC**C**TCCGCACC | 2795 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Haemoglobin variant Asn68Lys AACg-AAG | GAGCCACGGCTCTGCCCAGGTTAAGGGCCACGGCAAGAAGG TGGCCGACGCGCTGACCAA**C**GCCGTGGCGCACGTGGACGA CATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCACGCG | 2796 |
| | CGCGTGCAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATG TCGTCCACGTGCGCCACGGC**G**TTGGTCAGCGCGTCGGCCAC CTTCTTGCCGTGGCCCTTAACCTGGGCAGAGCCGTGGCTC | 2797 |
| | CTGACCAA**C**GCCGTGGC | 2798 |
| | GCCACGGC**G**TTGGTCAG | 2799 |
| Haemoglobin variant Asp74Gly GAC-GGC | AGGTTAAGGGCCACGGCAAGAAGGTGGCCGACGCGCTGACC AACGCCGTGGCGCACGTGG**A**CGACATGCCCAACGCGCTGTC CGCCCTGAGCGACCTGCACGCGCACAAGCTTCGGGTGGA | 2800 |
| | TCCACCCGAAGCTTGTGCGCGTGCAGGTCGCTCAGGGCGGA CAGCGCGTTGGGCATGTCG**T**CCACGTGCGCCACGGCGTTGG TCAGCGCGTCGGCCACCTTCTTGCCGTGGCCCTTAACCT | 2801 |
| | GCACGTGG**A**CGACATGC | 2802 |
| | GCATGTCG**T**CCACGTGC | 2803 |
| Haemoglobin variant Asp74His gGAC-CAC | CAGGTTAAGGGCCACGGCAAGAAGGTGGCCGACGCGCTGAC CAACGCCGTGGCGCACGTG**G**ACGACATGCCCAACGCGCTGT CCGCCCTGAGCGACCTGCACGCGCACAAGCTTCGGGTGG | 2804 |
| | CCACCCGAAGCTTGTGCGCGTGCAGGTCGCTCAGGGCGGAC AGCGCGTTGGGCATGTCGT**C**CACGTGCGCCACGGCGTTGGT CAGCGCGTCGGCCACCTTCTTGCCGTGGCCCTTAACCTG | 2805 |
| | CGCACGTG**G**ACGACATG | 2806 |
| | CATGTCGT**C**CACGTGCG | 2807 |
| Haemoglobin variant Asn78His cAAC-CAC | CACGGCAAGAAGGTGGCCGACGCGCTGACCAACGCCGTGG CGCACGTGGACGACATGCCC**A**ACGCGCTGTCCGCCCTGAGC GACCTGCACGCGCACAAGCTTCGGGTGGACCCGGTCAACT | 2808 |
| | AGTTGACCGGGTCCACCCGAAGCTTGTGCGCGTGCAGGTCG CTCAGGGCGGACAGCGCGT**T**GGGCATGTCGTCCACGTGCGC CACGGCGTTGGTCAGCGCGTCGGCCACCTTCTTGCCGTG | 2809 |
| | ACATGCCC**A**ACGCGCTG | 2810 |
| | CAGCGCGT**T**GGGCATGT | 2811 |
| Haemoglobin variant His87Tyr gCAC-TAC | ACCAACGCCGTGGCGCACGTGGACGACATGCCCAACGCGCT GTCCGCCCTGAGCGACCTG**C**ACGCGCACAAGCTTCGGGTGG ACCCGGTCAACTTCAAGGTGAGCGGCGGGCCGGGAGCGA | 2812 |
| | TCGCTCCCGGCCCGCCGCTCACCTTGAAGTTGACCGGGTCC ACCCGAAGCTTGTGCGCGT**G**CAGGTCGCTCAGGGCGGACAG CGCGTTGGGCATGTCGTCCACGTGCGCCACGGCGTTGGT | 2813 |
| | GCGACCTG**C**ACGCGCAC | 2814 |
| | GTGCGCGT**G**CAGGTCGC | 2815 |
| Haemoglobin variant Lys90Asn AAGc-AAC | GGCGCACGTGGACGACATGCCCAACGCGCTGTCCGCCCTGA GCGACCTGCACGCGCACAA**G**CTTCGGGTGGACCCGGTCAAC TTCAAGGTGAGCGGCGGGCCGGGAGCGATCTGGGTCGAG | 2816 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTCGACCCAGATCGCTCCCGGCCCGCCGCTCACCTTGAAGT<br>TGACCGGGTCCACCCGAAGCTTGTGCGCGTGCAGGTCGCTC<br>AGGGCGGACAGCGCGTTGGGCATGTCGTCCACGTGCGCC | 2817 |
| | GCGCACAAGCTTCGGGT | 2818 |
| | ACCCGAAGCTTGTGCGC | 2819 |
| Haemoglobin variant<br>Lys90Thr<br>AAG-ACG | TGGCGCACGTGGACGACATGCCCAACGCGCTGTCCGCCCTG<br>AGCGACCTGCACGCGCACAAGCTTCGGGTGGACCCGGTCAA<br>CTTCAAGGTGAGCGGCGGGCCGGGAGCGATCTGGGTCGA | 2820 |
| | TCGACCCAGATCGCTCCCGGCCCGCCGCTCACCTTGAAGTT<br>GACCGGGTCCACCCGAAGCTTGTGCGCGTGCAGGTCGCTCA<br>GGGCGGACAGCGCGTTGGGCATGTCGTCCACGTGCGCCA | 2821 |
| | CGCGCACAAGCTTCGGG | 2822 |
| | CCCGAAGCTTGTGCGCG | 2823 |
| Haemoglobin variant<br>Arg92Gln<br>CGG-CAG | ACGTGGACGACATGCCCAACGCGCTGTCCGCCCTGAGCGAC<br>CTGCACGCGCACAAGCTTCGGGTGGACCCGGTCAACTTCAA<br>GGTGAGCGGCGGGCCGGGAGCGATCTGGGTCGAGGGGCG | 2824 |
| | CGCCCCTCGACCCAGATCGCTCCCGGCCCGCCGCTCACCTT<br>GAAGTTGACCGGGTCCACCCGAAGCTTGTGCGCGTGCAGGT<br>CGCTCAGGGCGGACAGCGCGTTGGGCATGTCGTCCACGT | 2825 |
| | CAAGCTTCGGGTGGACC | 2826 |
| | GGTCCACCCGAAGCTTG | 2827 |
| Haemoglobin variant<br>Asp94Gly<br>GAC-GGC | ACGACATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCAC<br>GCGCACAAGCTTCGGGTGGACCCGGTCAACTTCAAGGTGAG<br>CGGCGGGCCGGGAGCGATCTGGGTCGAGGGGCGAGATGG | 2828 |
| | CCATCTCGCCCCTCGACCCAGATCGCTCCCGGCCCGCCGCT<br>CACCTTGAAGTTGACCGGGTCCACCCGAAGCTTGTGCGCGT<br>GCAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATGTCGT | 2829 |
| | TCGGGTGGACCCGGTCA | 2830 |
| | TGACCGGGTCCACCCGA | 2831 |
| Haemoglobin variant<br>Pro95Arg<br>CCG-CGG | ACATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCACGCG<br>CACAAGCTTCGGGTGGACCCGGTCAACTTCAAGGTGAGCGG<br>CGGGCCGGGAGCGATCTGGGTCGAGGGGCGAGATGGCGC | 2832 |
| | GCGCCATCTCGCCCCTCGACCCAGATCGCTCCCGGCCCGCC<br>GCTCACCTTGAAGTTGACCGGGTCCACCCGAAGCTTGTGCG<br>CGTGCAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATGT | 2833 |
| | GGTGGACCCGGTCAACT | 2834 |
| | AGTTGACCGGGTCCACC | 2835 |
| Haemoglobin variant<br>Ser102Arg<br>AGCc-AGA | CGGCGGCTGCGGGCCTGGGCCCTCGGCCCCACTGACCCTC<br>TTCTCTGCACAGCTCCTAAGCCACTGCCTGCTGGTGACCCTG<br>GCCGCCCACCTCCCCGCCGAGTTCACCCCTGCGGTGCAC | 2836 |
| | GTGCACCGCAGGGGTGAACTCGGCGGGGAGGTGGGCGGCC<br>AGGGTCACCAGCAGGCAGTGGCTTAGGAGCTGTGCAGAGAA<br>GAGGGTCAGTGGGGCCGAGGGCCCAGGCCCGCAGCCGCCG | 2837 |
| | CTCCTAAGCCACTGCCT | 2838 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGGCAGTGGCTTAGGAG | 2839 |
| Haemoglobin variant Glu116Lys cGAG-AAG | TTCTCTGCACAGCTCCTAAGCCACTGCCTGCTGGTGACCCTG GCCGCCCACCTCCCCGCCGAGTTCACCCCTGCGGTGCACGC CTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACCGTGC | 2840 |
| | GCACGGTGCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCG TGCACCGCAGGGGTGAACTCGGCGGGGAGGTGGGCGGCCA GGGTCACCAGCAGGCAGTGGCTTAGGAGCTGTGCAGAGAA | 2841 |
| | TCCCCGCCGAGTTCACC | 2842 |
| | GGTGAACTCGGCGGGGA | 2843 |
| Haemoglobin variant Ala120Glu GCG-GAG | TCCTAAGCCACTGCCTGCTGGTGACCCTGGCCGCCCACCTC CCCGCCGAGTTCACCCCTGCGGTGCACGCCTCCCTGGACAA GTTCCTGGCTTCTGTGAGCACCGTGCTGACCTCCAAATA | 2844 |
| | TATTTGGAGGTCAGCACGGTGCTCACAGAAGCCAGGAACTTG TCCAGGGAGGCGTGCACCGCAGGGGTGAACTCGGCGGGGA GGTGGGCGGCCAGGGTCACCAGCAGGCAGTGGCTTAGGA | 2845 |
| | CACCCCTGCGGTGCACG | 2846 |
| | CGTGCACCGCAGGGGTG | 2847 |
| Thalassaemia alpha Leu129Pro CTG-CCG | TGGCCGCCCACCTCCCCGCCGAGTTCACCCCTGCGGTGCAC GCCTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACCGTGCTG ACCTCCAAATACCGTTAAGCTGGAGCCTCGGTGGCCAT | 2848 |
| | ATGGCCACCGAGGCTCCAGCTTAACGGTATTTGGAGGTCAGC ACGGTGCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCGTG CACCGCAGGGGTGAACTCGGCGGGGAGGTGGGCGGCCA | 2849 |
| | CAAGTTCCTGGCTTCTG | 2850 |
| | CAGAAGCCAGGAACTTG | 2851 |
| Haemoglobin variant Arg141Leu CGT-CTT | TGCACGCCTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACCG TGCTGACCTCCAAATACCGTTAAGCTGGAGCCTCGGTGGCCA TGCTTCTTGCCCCTTGGGCCTCCCCCCAGCCCCTCCT | 2852 |
| | AGGAGGGGCTGGGGGGAGGCCCAAGGGGCAAGAAGCATGG CCACCGAGGCTCCAGCTTAACGGTATTTGGAGGTCAGCACG GTGCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCGTGCA | 2853 |
| | CAAATACCGTTAAGCTG | 2854 |
| | CAGCTTAACGGTATTTG | 2855 |

**EXAMPLE 16**
**Alpha-thalassemia - Hemoglobin alpha locus 2**

The attached table discloses the correcting oligonucleotide base sequences for the hemoglobin alpha locus 2 oligonucleotides of the invention.

**Table 23**
**HBA2 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Thalassaemia alpha<br>Met(-1)Thr<br>ATG-ACG | CCTGGCGCGCTCGCGGGCCGGCACTCTTCTGGTCCCCACAG<br>ACTCAGAGAGAACCCACCA**T**GGTGCTGTCTCCTGCCGACAAG<br>ACCAACGTCAAGGCCGCCTGGGGTAAGGTCGGCGCGCA | 2856 |
| | TGCGCGCCGACCTTACCCCAGGCGGCCTTGACGTTGGTCTT<br>GTCGGCAGGAGACAGCACC**A**TGGTGGGTTCTCTCTGAGTCT<br>GTGGGGACCAGAAGAGTGCCGGCCCGCGAGCGCGCCAGG | 2857 |
| | ACCCACCA**T**GGTGCTGT | 2858 |
| | ACAGCACC**A**TGGTGGGT | 2859 |
| Haemoglobin variant<br>Ala12Asp<br>GCC-GAC | CACAGACTCAGAGAGAACCCACCATGGTGCTGTCTCCTGCC<br>GACAAGACCAACGTCAAGG**C**CGCCTGGGGTAAGGTCGGCGC<br>GCACGCTGGCGAGTATGGTGCGGAGGCCCTGGAGAGGTG | 2860 |
| | CACCTCTCCAGGGCCTCCGCACCATACTCGCCAGCGTGCGC<br>GCCGACCTTACCCCAGGCG**G**CCTTGACGTTGGTCTTGTCGG<br>CAGGAGACAGCACCATGGTGGGTTCTCTCTGAGTCTGTG | 2861 |
| | CGTCAAGG**C**CGCCTGGG | 2862 |
| | CCCAGGCG**G**CCTTGACG | 2863 |
| Haemoglobin variant<br>Lys16Glu<br>tAAG-GAG | AGAGAACCCACCATGGTGCTGTCTCCTGCCGACAAGACCAAC<br>GTCAAGGCCGCCTGGGGT**A**AGGTCGGCGCGCACGCTGGCG<br>AGTATGGTGCGGAGGCCCTGGAGAGGTGAGGCTCCCTCC | 2864 |
| | GGAGGGAGCCTCACCTCTCCAGGGCCTCCGCACCATACTCG<br>CCAGCGTGCGCGCCGACCT**T**ACCCCAGGCGGCCTTGACGTT<br>GGTCTTGTCGGCAGGAGACAGCACCATGGTGGGTTCTCT | 2865 |
| | CCTGGGGT**A**AGGTCGGC | 2866 |
| | GCCGACCT**T**ACCCCAGG | 2867 |
| Haemoglobin variant<br>His20Gln<br>CACg-CAA | GGTGCTGTCTCCTGCCGACAAGACCAACGTCAAGGCCGCCT<br>GGGGTAAGGTCGGCGCGCA**C**GCTGGCGAGTATGGTGCGGA<br>GGCCCTGGAGAGGTGAGGCTCCCTCCCCTGCTCCGACCCG | 2868 |
| | CGGGTCGGAGCAGGGGAGGGAGCCTCACCTCTCCAGGGCC<br>TCCGCACCATACTCGCCAGC**G**TGCGCGCCGACCTTACCCCA<br>GGCGGCCTTGACGTTGGTCTTGTCGGCAGGAGACAGCACC | 2869 |
| | GGCGCGCA**C**GCTGGCGA | 2870 |
| | TCGCCAGC**G**TGCGCGCC | 2871 |
| Haemoglobin variant<br>Glu27Asp<br>GAGg-GAC | GACCAACGTCAAGGCCGCCTGGGGTAAGGTCGGCGCGCAC<br>GCTGGCGAGTATGGTGCGGA**G**GCCCTGGAGAGGTGAGGCT<br>CCCTCCCCTGCTCCGACCCGGGCTCCTCGCCCGCCCGGAC<br>C | 2872 |
| | GGTCCGGGCGGGCGAGGAGCCCGGGTCGGAGCAGGGGAG<br>GGAGCCTCACCTCTCCAGGGC**C**TCCGCACCATACTCGCCAG<br>CGTGCGCGCCGACCTTACCCCAGGCGGCCTTGACGTTGGTC | 2873 |
| | GGTGCGGA**G**GCCCTGGA | 2874 |
| | TCCAGGGC**C**TCCGCACC | 2875 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Thalassaemia alpha<br>Leu29Pro<br>CTG-CCG | ACGTCAAGGCCGCCTGGGGTAAGGTCGGCGCGCACGCTGG<br>CGAGTATGGTGCGGAGGCCCTGGAGAGGTGAGGCTCCCTCC<br>CCTGCTCCGACCCGGGCTCCTCGCCCGCCCGGACCCACAG | 2876 |
| | CTGTGGGTCCGGGCGGGCGAGGAGCCCGGGTCGGAGCAGG<br>GGAGGGAGCCTCACCTCTCCAGGGCCTCCGCACCATACTCG<br>CCAGCGTGCGCGCCGACCTTACCCCAGGCGGCCTTGACGT | 2877 |
| | GGAGGCCCTGGAGAGGT | 2878 |
| | ACCTCTCCAGGGCCTCC | 2879 |
| Haemoglobin variant<br>Asp47His<br>cGAC-CAC | GCTTCTCCCCGCAGGATGTTCCTGTCCTTCCCCACCACCAAG<br>ACCTACTTCCCGCACTTCGACCTGAGCCACGGCTCTGCCCA<br>GGTTAAGGGCCACGGCAAGAAGGTGGCCGACGCGCTGA | 2880 |
| | TCAGCGCGTCGGCCACCTTCTTGCCGTGGCCCTTAACCTGG<br>GCAGAGCCGTGGCTCAGGTCGAAGTGCGGGAAGTAGGTCTT<br>GGTGGTGGGGAAGGACAGGAACATCCTGCGGGGAGAAGC | 2881 |
| | CGCACTTCGACCTGAGC | 2882 |
| | GCTCAGGTCGAAGTGCG | 2883 |
| Haemoglobin variant<br>Leu48Arg<br>CTG-CGG | CTCCCCGCAGGATGTTCCTGTCCTTCCCCACCACCAAGACCT<br>ACTTCCCGCACTTCGACCTGAGCCACGGCTCTGCCCAGGTTA<br>AGGGCCACGGCAAGAAGGTGGCCGACGCGCTGACCAA | 2884 |
| | TTGGTCAGCGCGTCGGCCACCTTCTTGCCGTGGCCCTTAAC<br>CTGGGCAGAGCCGTGGCTCAGGTCGAAGTGCGGGAAGTAG<br>GTCTTGGTGGTGGGGAAGGACAGGAACATCCTGCGGGGAG | 2885 |
| | CTTCGACCTGAGCCACG | 2886 |
| | CGTGGCTCAGGTCGAAG | 2887 |
| Haemoglobin variant<br>Gln54Glu<br>cCAG-GAG | CTGTCCTTCCCCACCACCAAGACCTACTTCCCGCACTTCGAC<br>CTGAGCCACGGCTCTGCCCAGGTTAAGGGCCACGGCAAGAA<br>GGTGGCCGACGCGCTGACCAACGCCGTGGCGCACGTGG | 2888 |
| | CCACGTGCGCCACGGCGTTGGTCAGCGCGTCGGCCACCTTC<br>TTGCCGTGGCCCTTAACCTGGGCAGAGCCGTGGCTCAGGTC<br>GAAGTGCGGGAAGTAGGTCTTGGTGGTGGGGAAGGACAG | 2889 |
| | GCTCTGCCCAGGTTAAG | 2890 |
| | CTTAACCTGGGCAGAGC | 2891 |
| Haemoglobin variant<br>Gly59Asp<br>GGC-GAC | CCAAGACCTACTTCCCGCACTTCGACCTGAGCCACGGCTCTG<br>CCCAGGTTAAGGGCCACGGCAAGAAGGTGGCCGACGCGCT<br>GACCAACGCCGTGGCGCACGTGGACGACATGCCCAACGC | 2892 |
| | GCGTTGGGCATGTCGTCCACGTGCGCCACGGCGTTGGTCAG<br>CGCGTCGGCCACCTTCTTGCCGTGGCCCTTAACCTGGGCAG<br>AGCCGTGGCTCAGGTCGAAGTGCGGGAAGTAGGTCTTGG | 2893 |
| | GGGCCACGGCAAGAAGG | 2894 |
| | CCTTCTTGCCGTGGCCC | 2895 |
| Haemoglobin variant<br>Asn68Lys<br>AACg-AAG | GAGCCACGGCTCTGCCCAGGTTAAGGGCCACGGCAAGAAGG<br>TGGCCGACGCGCTGACCAACGCCGTGGCGCACGTGGACGA<br>CATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCACGCG | 2896 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CGCGTGCAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATG<br>TCGTCCACGTGCGCCACGGC**G**TTGGTCAGCGCGTCGGCCAC<br>CTTCTTGCCGTGGCCCTTAACCTGGGCAGAGCCGTGGCTC | 2897 |
| | CTGACCAA**C**GCCGTGGC | 2898 |
| | GCCACGGC**G**TTGGTCAG | 2899 |
| Haemoglobin variant<br>Asn68Lys<br>AACg-AAA | GAGCCACGGCTCTGCCCAGGTTAAGGGCCACGGCAAGAAGG<br>TGGCCGACGCGCTGACCAA**C**GCCGTGGCGCACGTGGACGA<br>CATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCACGCG | 2900 |
| | CGCGTGCAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATG<br>TCGTCCACGTGCGCCACGGC**G**TTGGTCAGCGCGTCGGCCAC<br>CTTCTTGCCGTGGCCCTTAACCTGGGCAGAGCCGTGGCTC | 2901 |
| | CTGACCAA**C**GCCGTGGC | 2902 |
| | GCCACGGC**G**TTGGTCAG | 2903 |
| Haemoglobin variant<br>Asn78Lys<br>AACg-AAA | CGGCAAGAAGGTGGCCGACGCGCTGACCAACGCCGTGGCG<br>CACGTGGACGACATGCCCAA**C**GCGCTGTCCGCCCTGAGCGA<br>CCTGCACGCGCACAAGCTTCGGGTGGACCCGGTCAACTTC | 2904 |
| | GAAGTTGACCGGGTCCACCCGAAGCTTGTGCGCGTGCAGGT<br>CGCTCAGGGCGGACAGCGC**G**TTGGGCATGTCGTCCACGTGC<br>GCCACGGCGTTGGTCAGCGCGTCGGCCACCTTCTTGCCG | 2905 |
| | ATGCCCAA**C**GCGCTGTC | 2906 |
| | GACAGCGC**G**TTGGGCAT | 2907 |
| Haemoglobin variant<br>Asp85Val<br>GAC-GTC | CGCTGACCAACGCCGTGGCGCACGTGGACGACATGCCCAAC<br>GCGCTGTCCGCCCTGAGCG**A**CCTGCACGCGCACAAGCTTCG<br>GGTGGACCCGGTCAACTTCAAGGTGAGCGGCGGGCCGGG | 2908 |
| | CCCGGCCCGCCGCTCACCTTGAAGTTGACCGGGTCCACCCG<br>AAGCTTGTGCGCGTGCAGG**T**CGCTCAGGGCGGACAGCGCGT<br>TGGGCATGTCGTCCACGTGCGCCACGGCGTTGGTCAGCG | 2909 |
| | CCTGAGCG**A**CCTGCACG | 2910 |
| | CGTGCAGG**T**CGCTCAGG | 2911 |
| Haemoglobin variant<br>Lys90Asn<br>AAGc-AAT | GGCGCACGTGGACGACATGCCCAACGCGCTGTCCGCCCTGA<br>GCGACCTGCACGCGCACAA**G**CTTCGGGTGGACCCGGTCAAC<br>TTCAAGGTGAGCGGCGGGCCGGGAGCGATCTGGGTCGAG | 2912 |
| | CTCGACCCAGATCGCTCCCGGCCCGCCGCTCACCTTGAAGT<br>TGACCGGGTCCACCCGAAG**C**TTGTGCGCGTGCAGGTCGCTC<br>AGGGCGGACAGCGCGTTGGGCATGTCGTCCACGTGCGCC | 2913 |
| | GCGCACAA**G**CTTCGGGT | 2914 |
| | ACCCGAAG**C**TTGTGCGC | 2915 |
| Haemoglobin variant<br>Asp94His<br>gGAC-CAC | GACGACATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCA<br>CGCGCACAAGCTTCGGGTG**G**ACCCGGTCAACTTCAAGGTGA<br>GCGGCGGGCCGGGAGCGATCTGGGTCGAGGGGCGAGATG | 2916 |
| | CATCTCGCCCCTCGACCCAGATCGCTCCCGGCCCGCCGCTC<br>ACCTTGAAGTTGACCGGGT**C**CACCCGAAGCTTGTGCGCGTG<br>CAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATGTCGTC | 2917 |
| | TTCGGGTG**G**ACCCGGTC | 2918 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GACCGGGTCCACCCGAA | 2919 |
| Haemoglobin variant Pro95Leu CCG-CTG | ACATGCCCAACGCGCTGTCCGCCCTGAGCGACCTGCACGCG<br>CACAAGCTTCGGGTGGACCCGGTCAACTTCAAGGTGAGCGG<br>CGGGCCGGGAGCGATCTGGGTCGAGGGGCGAGATGGCGC | 2920 |
| | GCGCCATCTCGCCCCTCGACCCAGATCGCTCCCGGCCCGCC<br>GCTCACCTTGAAGTTGACCGGGTCCACCCGAAGCTTGTGCG<br>CGTGCAGGTCGCTCAGGGCGGACAGCGCGTTGGGCATGT | 2921 |
| | GGTGGACCCGGTCAACT | 2922 |
| | AGTTGACCGGGTCCACC | 2923 |
| Haemoglobin variant Ser102Arg aAGC-CGC | TAGCGCAGGCGGCGGCTGCGGGCCTGGGCCGCACTGACCC<br>TCTTCTCTGCACAGCTCCTAAGCCACTGCCTGCTGGTGACCC<br>TGGCCGCCCACCTCCCCGCCGAGTTCACCCCTGCGGTGC | 2924 |
| | GCACCGCAGGGGTGAACTCGGCGGGGAGGTGGGCGGCCAG<br>GGTCACCAGCAGGCAGTGGCTTAGGAGCTGTGCAGAGAAGA<br>GGGTCAGTGCGGCCCAGGCCCGCAGCCGCCGCCTGCGCTA | 2925 |
| | AGCTCCTAAGCCACTGC | 2926 |
| | GCAGTGGCTTAGGAGCT | 2927 |
| Haemoglobin H disease Cys104Tyr TGC-TAC | GGCGGCGGCTGCGGGCCTGGGCCGCACTGACCCTCTTCTCT<br>GCACAGCTCCTAAGCCACTGCCTGCTGGTGACCCTGGCCGC<br>CCACCTCCCCGCCGAGTTCACCCCTGCGGTGCACGCCTC | 2928 |
| | GAGGCGTGCACCGCAGGGGTGAACTCGGCGGGGAGGTGGG<br>CGGCCAGGGTCACCAGCAGGCAGTGGCTTAGGAGCTGTGCA<br>GAGAAGAGGGTCAGTGCGGCCCAGGCCCGCAGCCGCCGCC | 2929 |
| | AAGCCACTGCCTGCTGG | 2930 |
| | CCAGCAGGCAGTGGCTT | 2931 |
| Haemoglobin variant Ala111Val GCC-GTC | CCGCACTGACCCTCTTCTCTGCACAGCTCCTAAGCCACTGCC<br>TGCTGGTGACCCTGGCCGCCCACCTCCCCGCCGAGTTCACC<br>CCTGCGGTGCACGCCTCCCTGGACAAGTTCCTGGCTTC | 2932 |
| | GAAGCCAGGAACTTGTCCAGGGAGGCGTGCACCGCAGGGGT<br>GAACTCGGCGGGGAGGTGGGCGGCCAGGGTCACCAGCAGG<br>CAGTGGCTTAGGAGCTGTGCAGAGAAGAGGGTCAGTGCGG | 2933 |
| | CCTGGCCGCCCACCTCC | 2934 |
| | GGAGGTGGGCGGCCAGG | 2935 |
| Haemoglobin variant Ala120Glu GCG-GAG | TCCTAAGCCACTGCCTGCTGGTGACCCTGGCCGCCCACCTC<br>CCCGCCGAGTTCACCCCTGCGGTGCACGCCTCCCTGGACAA<br>GTTCCTGGCTTCTGTGAGCACCGTGCTGACCTCCAAATA | 2936 |
| | TATTTGGAGGTCAGCACGGTGCTCACAGAAGCCAGGAACTTG<br>TCCAGGGAGGCGTGCACCGCAGGGGTGAACTCGGCGGGGA<br>GGTGGGCGGCCAGGGTCACCAGCAGGCAGTGGCTTAGGA | 2937 |
| | CACCCCTGCGGTGCACG | 2938 |
| | CGTGCACCGCAGGGGTG | 2939 |
| Haemoglobin variant His122Gln CACg-CAG | CCACTGCCTGCTGGTGACCCTGGCCGCCCACCTCCCCGCCG<br>AGTTCACCCCTGCGGTGCACGCCTCCCTGGACAAGTTCCTG<br>GCTTCTGTGAGCACCGTGCTGACCTCCAAATACCGTTAA | 2940 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTAACGGTATTTGGAGGTCAGCACGGTGCTCACAGAAGCCAG<br>GAACTTGTCCAGGGAGGC**G**TGCACCGCAGGGGTGAACTCGG<br>CGGGGAGGTGGGCGGCCAGGGTCACCAGCAGGCAGTGG | 2941 |
| | GCGGTGCA**C**GCCTCCCT | 2942 |
| | AGGGAGGC**G**TGCACCGC | 2943 |
| Haemoglobin variant<br>Ala123Ser<br>cGCC-TCC | CACTGCCTGCTGGTGACCCTGGCCGCCCACCTCCCCGCCGA<br>GTTCACCCCTGCGGTGCAC**G**CCTCCCTGGACAAGTTCCTGG<br>CTTCTGTGAGCACCGTGCTGACCTCCAAATACCGTTAAG | 2944 |
| | CTTAACGGTATTTGGAGGTCAGCACGGTGCTCACAGAAGCCA<br>GGAACTTGTCCAGGGAGG**C**GTGCACCGCAGGGGTGAACTCG<br>GCGGGGAGGTGGGCGGCCAGGGTCACCAGCAGGCAGTG | 2945 |
| | CGGTGCAC**G**CCTCCCTG | 2946 |
| | CAGGGAGG**C**GTGCACCG | 2947 |
| Thalassaemia alpha<br>Leu125Pro<br>CTG-CCG | TGCTGGTGACCCTGGCCGCCCACCTCCCCGCCGAGTTCACC<br>CCTGCGGTGCACGCCTCCC**T**GGACAAGTTCCTGGCTTCTGT<br>GAGCACCGTGCTGACCTCCAAATACCGTTAAGCTGGAGC | 2948 |
| | GCTCCAGCTTAACGGTATTTGGAGGTCAGCACGGTGCTCACA<br>GAAGCCAGGAACTTGTCC**A**GGGAGGCGTGCACCGCAGGGG<br>TGAACTCGGCGGGGAGGTGGGCGGCCAGGGTCACCAGCA | 2949 |
| | CGCCTCCC**T**GGACAAGT | 2950 |
| | ACTTGTCC**A**GGGAGGCG | 2951 |
| Haemoglobin variant<br>Ser131Pro<br>tTCT-CCT | GCCCACCTCCCCGCCGAGTTCACCCCTGCGGTGCACGCCTC<br>CCTGGACAAGTTCCTGGCT**T**CTGTGAGCACCGTGCTGACCTC<br>CAAATACCGTTAAGCTGGAGCCTCGGTAGCCGTTCCTC | 2952 |
| | GAGGAACGGCTACCGAGGCTCCAGCTTAACGGTATTTGGAG<br>GTCAGCACGGTGCTCACAG**A**AGCCAGGAACTTGTCCAGGGA<br>GGCGTGCACCGCAGGGGTGAACTCGGCGGGGAGGTGGGC | 2953 |
| | TCCTGGCT**T**CTGTGAGC | 2954 |
| | GCTCACAG**A**AGCCAGGA | 2955 |
| Haemoglobin variant<br>Leu136Met<br>gCTG-ATG | GAGTTCACCCCTGCGGTGCACGCCTCCCTGGACAAGTTCCT<br>GGCTTCTGTGAGCACCGTG**C**TGACCTCCAAATACCGTTAAGC<br>TGGAGCCTCGGTAGCCGTTCCTCCTGCCCGCTGGGCCT | 2956 |
| | AGGCCCAGCGGGCAGGAGGAACGGCTACCGAGGCTCCAGC<br>TTAACGGTATTTGGAGGTCA**G**CACGGTGCTCACAGAAGCCAG<br>GAACTTGTCCAGGGAGGCGTGCACCGCAGGGGTGAACTC | 2957 |
| | GCACCGTG**C**TGACCTCC | 2958 |
| | GGAGGTCA**G**CACGGTGC | 2959 |
| Haemoglobin variant<br>Leu136Pro<br>CTG-CCG | AGTTCACCCCTGCGGTGCACGCCTCCCTGGACAAGTTCCTG<br>GCTTCTGTGAGCACCGTGC**T**GACCTCCAAATACCGTTAAGCT<br>GGAGCCTCGGTAGCCGTTCCTCCTGCCCGCTGGGCCTC | 2960 |
| | GAGGCCCAGCGGGCAGGAGGAACGGCTACCGAGGCTCCAG<br>CTTAACGGTATTTGGAGGTC**A**GCACGGTGCTCACAGAAGCCA<br>GGAACTTGTCCAGGGAGGCGTGCACCGCAGGGGTGAACT | 2961 |
| | CACCGTGC**T**GACCTCCA | 2962 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGGAGGTCAGCACGGTG | 2963 |
| Haemoglobin variant Arg141Cys cCGT-TGT | GTGCACGCCTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACC GTGCTGACCTCCAAATACCGTTAAGCTGGAGCCTCGGTAGCC GTTCCTCCTGCCCGCTGGGCCTCCCAACGGGCCCTCC | 2964 |
| | GGAGGGCCCGTTGGGAGGCCCAGCGGGCAGGAGGAACGGC TACCGAGGCTCCAGCTTAACGGTATTTGGAGGTCAGCACGGT GCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCGTGCAC | 2965 |
| | CCAAATACCGTTAAGCT | 2966 |
| | AGCTTAACGGTATTTGG | 2967 |
| Haemoglobin variant Term142Gln tTAA-CAA | CACGCCTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACCGTG CTGACCTCCAAATACCGTTAAGCTGGAGCCTCGGTAGCCGTT CCTCCTGCCCGCTGGGCCTCCCAACGGGCCCTCCTCC | 2968 |
| | GGAGGAGGGCCCGTTGGGAGGCCCAGCGGGCAGGAGGAAC GGCTACCGAGGCTCCAGCTTAACGGTATTTGGAGGTCAGCA CGGTGCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCGTG | 2969 |
| | AATACCGTTAAGCTGGA | 2970 |
| | TCCAGCTTAACGGTATT | 2971 |
| Haemoglobin variant Term142Lys tTAA-AAA | CACGCCTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACCGTG CTGACCTCCAAATACCGTTAAGCTGGAGCCTCGGTAGCCGTT CCTCCTGCCCGCTGGGCCTCCCAACGGGCCCTCCTCC | 2972 |
| | GGAGGAGGGCCCGTTGGGAGGCCCAGCGGGCAGGAGGAAC GGCTACCGAGGCTCCAGCTTAACGGTATTTGGAGGTCAGCA CGGTGCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCGTG | 2973 |
| | AATACCGTTAAGCTGGA | 2974 |
| | TCCAGCTTAACGGTATT | 2975 |
| Haemoglobin variant Term142Tyr TAAg-TAT | CGCCTCCCTGGACAAGTTCCTGGCTTCTGTGAGCACCGTGCT GACCTCCAAATACCGTTAAGCTGGAGCCTCGGTAGCCGTTCC TCCTGCCCGCTGGGCCTCCCAACGGGCCCTCCTCCCC | 2976 |
| | GGGGAGGAGGGCCCGTTGGGAGGCCCAGCGGGCAGGAGG AACGGCTACCGAGGCTCCAGCTTAACGGTATTTGGAGGTCAG CACGGTGCTCACAGAAGCCAGGAACTTGTCCAGGGAGGCG | 2977 |
| | TACCGTTAAGCTGGAGC | 2978 |
| | GCTCCAGCTTAACGGTA | 2979 |

**EXAMPLE 17**
**Human mismatch repair - MLH1**

The human MLH1 gene is homologous to the bacterial *mutL* gene, which is involved in mismatch repair. Mutations in the MLH1 gene have been identified in many individuals with hereditary nonpolyposis colorectal cancer (HNPCC). Mutations in the MLH1 gene are also implicated in predisposition to a variety of cancers associated with, for example, Muir-Torre syndrome and Turcot

syndrome. The attached table discloses the correcting oligonucleotide base sequences for the MLH1 oligonucleotides of the invention.

**Table 24**
**MLH1 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non-polyposis colorectal cancer Met1Arg ATG-AGG | TTGGCTGAAGGCACTTCCGTTGAGCATCTAGACGTTTCCTTG GCTCTTCTGGCGCCAAAA**T**GTCGTTCGTGGCAGGGGTTATTC GGCGGCTGGACGAGACAGTGGTGAACCGCATCGCGGC | 2980 |
| | GCCGCGATGCGGTTCACCACTGTCTCGTCCAGCCGCCGAAT AACCCCTGCCACGAACGAC**A**TTTTGGCGCCAGAAGAGCCAA GGAAACGTCTAGATGCTCAACGGAAGTGCCTTCAGCCAA | 2981 |
| | CGCCAAAA**T**GTCGTTCG | 2982 |
| | CGAACGAC**A**TTTTGGCG | 2983 |
| Non-polyposis colorectal cancer Met1Lys ATG-AAG | TTGGCTGAAGGCACTTCCGTTGAGCATCTAGACGTTTCCTTG GCTCTTCTGGCGCCAAAA**T**GTCGTTCGTGGCAGGGGTTATTC GGCGGCTGGACGAGACAGTGGTGAACCGCATCGCGGC | 2984 |
| | GCCGCGATGCGGTTCACCACTGTCTCGTCCAGCCGCCGAAT AACCCCTGCCACGAACGAC**A**TTTTGGCGCCAGAAGAGCCAA GGAAACGTCTAGATGCTCAACGGAAGTGCCTTCAGCCAA | 2985 |
| | CGCCAAAA**T**GTCGTTCG | 2986 |
| | CGAACGAC**A**TTTTGGCG | 2987 |
| Non-polyposis colorectal cancer Met35Arg ATG-AGG | TGGTGAACCGCATCGCGGCGGGGGAAGTTATCCAGCGGCCA GCTAATGCTATCAAAGAGA**T**GATTGAGAACTGGTACGGAGGG AGTCGAGCCGGGCTCACTTAAGGGCTACGACTTAACGG | 2988 |
| | CCGTTAAGTCGTAGCCCTTAAGTGAGCCCGGCTCGACTCCCT CCGTACCAGTTCTCAATC**A**TCTCTTTGATAGCATTAGCTGGCC GCTGGATAACTTCCCCCGCCGCGATGCGGTTCACCA | 2989 |
| | CAAAGAGA**T**GATTGAGA | 2990 |
| | TCTCAATC**A**TCTCTTTG | 2991 |
| Non-polyposis colorectal cancer Ser44Phe TCC-TTC | TAGAGTAGTTGCAGACTGATAAATTATTTTCTGTTTGATTTGCC AGTTTAGATGCAAAAT**C**CACAAGTATTCAAGTGATTGTTAAAG AGGGAGGCCTGAAGTTGATTCAGATCCAAGACAA | 2992 |
| | TTGTCTTGGATCTGAATCAACTTCAGGCCTCCCTCTTTAACAA TCACTTGAATACTTGTG**G**ATTTTGCATCTAAACTGGCAAATCA AACAGAAAATAATTTATCAGTCTGCAACTACTCTA | 2993 |
| | TGCAAAAT**C**CACAAGTA | 2994 |
| | TACTTGTG**G**ATTTTGCA | 2995 |
| Non-polyposis colorectal cancer Gln62Lys CAA-AAA | GCAAAATCCACAAGTATTCAAGTGATTGTTAAAGAGGGAGGC CTGAAGTTGATTCAGATC**C**AAGACAATGGCACCGGGATCAGG GTAAGTAAAACCTCAAAGTAGCAGGATGTTTGTGCGC | 2996 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GCGCACAAACATCCTGCTACTTTGAGGTTTTACTTACCCTGAT CCCGGTGCCATTGTCTTGGATCTGAATCAACTTCAGGCCTCC CTCTTTAACAATCACTTGAATACTTGTGGATTTTGC | 2997 |
| | TTCAGATCCAAGACAAT | 2998 |
| | ATTGTCTTGGATCTGAA | 2999 |
| Non-polyposis colorectal cancer Gln62Term CAA-TAA | GCAAAATCCACAAGTATTCAAGTGATTGTTAAAGAGGGAGGC CTGAAGTTGATTCAGATCCAAGACAATGGCACCGGGATCAGG GTAAGTAAAACCTCAAAGTAGCAGGATGTTTGTGCGC | 3000 |
| | GCGCACAAACATCCTGCTACTTTGAGGTTTTACTTACCCTGAT CCCGGTGCCATTGTCTTGGATCTGAATCAACTTCAGGCCTCC CTCTTTAACAATCACTTGAATACTTGTGGATTTTGC | 3001 |
| | TTCAGATCCAAGACAAT | 3002 |
| | ATTGTCTTGGATCTGAA | 3003 |
| Non-polyposis colorectal cancer Asn64Ser AAT-AGT | CCACAAGTATTCAAGTGATTGTTAAAGAGGGAGGCCTGAAGT TGATTCAGATCCAAGACAATGGCACCGGGATCAGGGTAAGTA AAACCTCAAAGTAGCAGGATGTTTGTGCGCTTCATGG | 3004 |
| | CCATGAAGCGCACAAACATCCTGCTACTTTGAGGTTTTACTTA CCCTGATCCCGGTGCCATTGTCTTGGATCTGAATCAACTTCA GGCCTCCCTCTTTAACAATCACTTGAATACTTGTGG | 3005 |
| | CCAAGACAATGGCACCG | 3006 |
| | CGGTGCCATTGTCTTGG | 3007 |
| Non-polyposis colorectal cancer Gly67Arg GGG-AGG | ATTCAAGTGATTGTTAAAGAGGGAGGCCTGAAGTTGATTCAGA TCCAAGACAATGGCACCGGGATCAGGGTAAGTAAAACCTCAA AGTAGCAGGATGTTTGTGCGCTTCATGGAAGAGTCA | 3008 |
| | TGACTCTTCCATGAAGCGCACAAACATCCTGCTACTTTGAGGT TTTACTTACCCTGATCCCGGTGCCATTGTCTTGGATCTGAATC AACTTCAGGCCTCCCTCTTTAACAATCACTTGAAT | 3009 |
| | ATGGCACCGGGATCAGG | 3010 |
| | CCTGATCCCGGTGCCAT | 3011 |
| Non-polyposis colorectal cancer Gly67Arg GGG-CGG | ATTCAAGTGATTGTTAAAGAGGGAGGCCTGAAGTTGATTCAGA TCCAAGACAATGGCACCGGGATCAGGGTAAGTAAAACCTCAA AGTAGCAGGATGTTTGTGCGCTTCATGGAAGAGTCA | 3012 |
| | TGACTCTTCCATGAAGCGCACAAACATCCTGCTACTTTGAGGT TTTACTTACCCTGATCCCGGTGCCATTGTCTTGGATCTGAATC AACTTCAGGCCTCCCTCTTTAACAATCACTTGAAT | 3013 |
| | ATGGCACCGGGATCAGG | 3014 |
| | CCTGATCCCGGTGCCAT | 3015 |
| Non-polyposis colorectal cancer Gly67Trp GGG-TGG | ATTCAAGTGATTGTTAAAGAGGGAGGCCTGAAGTTGATTCAGA TCCAAGACAATGGCACCGGGATCAGGGTAAGTAAAACCTCAA AGTAGCAGGATGTTTGTGCGCTTCATGGAAGAGTCA | 3016 |
| | TGACTCTTCCATGAAGCGCACAAACATCCTGCTACTTTGAGGT TTTACTTACCCTGATCCCGGTGCCATTGTCTTGGATCTGAATC AACTTCAGGCCTCCCTCTTTAACAATCACTTGAAT | 3017 |
| | ATGGCACCGGGATCAGG | 3018 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCTGATCCCGGTGCCAT | 3019 |
| Non-polyposis colorectal cancer Cys77Arg TGT-CGT | GTAACATGATTATTTACTCATCTTTTTGGTATCTAACAGAAAGA AGATCTGGATATTGTATGTGAAAGGTTCACTACTAGTAAACTG CAGTCCTTTGAGGATTTAGCCAGTATTTCTACCT | 3020 |
| | AGGTAGAAATACTGGCTAAATCCTCAAAGGACTGCAGTTTACT AGTAGTGAACCTTTCACATACAATATCCAGATCTTCTTTCTGTT AGATACCAAAAAGATGAGTAAATAATCATGTTAC | 3021 |
| | ATATTGTATGTGAAAGG | 3022 |
| | CCTTTCACATACAATAT | 3023 |
| Non-polyposis colorectal cancer Cys77Tyr TGT-TAT | TAACATGATTATTTACTCATCTTTTTGGTATCTAACAGAAAGAA GATCTGGATATTGTATGTGAAAGGTTCACTACTAGTAAACTGC AGTCCTTTGAGGATTTAGCCAGTATTTCTACCTA | 3024 |
| | TAGGTAGAAATACTGGCTAAATCCTCAAAGGACTGCAGTTTAC TAGTAGTGAACCTTTCACATACAATATCCAGATCTTCTTTCTGT TAGATACCAAAAAGATGAGTAAATAATCATGTTA | 3025 |
| | TATTGTATGTGAAAGGT | 3026 |
| | ACCTTTCACATACAATA | 3027 |
| Non-polyposis colorectal cancer Ser93Gly AGT-GGT | CTGGATATTGTATGTGAAAGGTTCACTACTAGTAAACTGCAGT CCTTTGAGGATTTAGCCAGTATTTCTACCTATGGCTTTCGAGG TGAGGTAAGCTAAAGATTCAAGAAATGTGTAAAAT | 3028 |
| | ATTTTACACATTTCTTGAATCTTTAGCTTACCTCACCTCGAAAG CCATAGGTAGAAATACTGGCTAAATCCTCAAAGGACTGCAGTT TACTAGTAGTGAACCTTTCACATACAATATCCAG | 3029 |
| | ATTTAGCCAGTATTTCT | 3030 |
| | AGAAATACTGGCTAAAT | 3031 |
| Non-polyposis colorectal cancer Arg100Term CGA-TGA | TTCACTACTAGTAAACTGCAGTCCTTTGAGGATTTAGCCAGTA TTTCTACCTATGGCTTTCGAGGTGAGGTAAGCTAAAGATTCAA GAAATGTGTAAAATATCCTCCTGTGATGACATTGT | 3032 |
| | ACAATGTCATCACAGGAGGATATTTTACACATTTCTTGAATCTT TAGCTTACCTCACCTCGAAAGCCATAGGTAGAAATACTGGCTA AATCCTCAAAGGACTGCAGTTTACTAGTAGTGAA | 3033 |
| | ATGGCTTTCGAGGTGAG | 3034 |
| | CTCACCTCGAAAGCCAT | 3035 |
| Non-polyposis colorectal cancer Ile107Arg ATA-AGA | ACCCAGCAGTGAGTTTTTCTTTCAGTCTATTTTCTTTTCTTCCT TAGGCTTTGGCCAGCATAAGCCATGTGGCTCATGTTACTATTA CAACGAAAACAGCTGATGGAAAGTGTGCATACAG | 3036 |
| | CTGTATGCACACTTTCCATCAGCTGTTTTCGTTGTAATAGTAA CATGAGCCACATGGCTTATGCTGGCCAAAGCCTAAGGAAGAA AAGAAAATAGACTGAAAGAAAAACTCACTGCTGGGT | 3037 |
| | GGCCAGCATAAGCCATG | 3038 |
| | CATGGCTTATGCTGGCC | 3039 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non-polyposis colorectal cancer Thr117Arg ACG-AGG | TTTCTTTTCTTCCTTAGGCTTTGGCCAGCATAAGCCATGTGGC TCATGTTACTATTACAACGAAAACAGCTGATGGAAAGTGTGCA TACAGGTATAGTGCTGACTTCTTTTACTCATATAT | 3040 |
| | ATATATGAGTAAAAGAAGTCAGCACTATACCTGTATGCACACT TTCCATCAGCTGTTTTCGTTGTAATAGTAACATGAGCCACATG GCTTATGCTGGCCAAAGCCTAAGGAAGAAAAGAAA | 3041 |
| | TATTACAACGAAAACAG | 3042 |
| | CTGTTTTCGTTGTAATA | 3043 |
| Non-polyposis colorectal cancer Thr117Met ACG-ATG | TTTCTTTTCTTCCTTAGGCTTTGGCCAGCATAAGCCATGTGGC TCATGTTACTATTACAACGAAAACAGCTGATGGAAAGTGTGCA TACAGGTATAGTGCTGACTTCTTTTACTCATATAT | 3044 |
| | ATATATGAGTAAAAGAAGTCAGCACTATACCTGTATGCACACT TTCCATCAGCTGTTTTCGTTGTAATAGTAACATGAGCCACATG GCTTATGCTGGCCAAAGCCTAAGGAAGAAAAGAAA | 3045 |
| | TATTACAACGAAAACAG | 3046 |
| | CTGTTTTCGTTGTAATA | 3047 |
| Non-polyposis colorectal cancer Gly133Term GGA-TGA | TCTATCTCTCTACTGGATATTAATTTGTTATATTTTCTCATTAGA GCAAGTTACTCAGATGGAAAACTGAAAGCCCCTCCTAAACCA TGTGCTGGCAATCAAGGGACCCAGATCACGGTAA | 3048 |
| | TTACCGTGATCTGGGTCCCTTGATTGCCAGCACATGGTTTAG GAGGGGCTTTCAGTTTTCCATCTGAGTAACTTGCTCTAATGAG AAAATATAACAAATTAATATCCAGTAGAGAGATAGA | 3049 |
| | ACTCAGATGGAAAACTG | 3050 |
| | CAGTTTTCCATCTGAGT | 3051 |
| Non-polyposis colorectal cancer Val185Gly GTA-GGA | TAGTGTGTGTTTTTGGCAACTCTTTTCTTACTCTTTTGTTTTTC TTTTCCAGGTATTCAGTACACAATGCAGGCATTAGTTTCTCAG TTAAAAAAGTAAGTTCTTGGTTTATGGGGGATGG | 3052 |
| | CCATCCCCCATAAACCAAGAACTTACTTTTTTAACTGAGAAAC TAATGCCTGCATTGTGTACTGAATACCTGGAAAAGAAAAACAA AAGAGTAAGAAAAGAGTTGCCAAAAACACACACTA | 3053 |
| | GTATTCAGTACACAATG | 3054 |
| | CATTGTGTACTGAATAC | 3055 |
| Non-polyposis colorectal cancer Ser193Pro TCA-CCA | TTTCTTACTCTTTTGTTTTTCTTTTCCAGGTATTCAGTACACAAT GCAGGCATTAGTTTCTCAGTTAAAAAAGTAAGTTCTTGGTTTAT GGGGGATGGTTTTGTTTTATGAAAAGAAAAAA | 3056 |
| | TTTTTTCTTTTCATAAAACAAAACCATCCCCCATAAACCAAGAA CTTACTTTTTTAACTGAGAAACTAATGCCTGCATTGTGTACTG AATACCTGGAAAAGAAAAACAAAAGAGTAAGAAA | 3057 |
| | TTAGTTTCTCAGTTAAA | 3058 |
| | TTTAACTGAGAAACTAA | 3059 |
| Non-polyposis colorectal cancer Val213Met GTG-ATG | TTTGTTTATCAGCAAGGAGAGACAGTAGCTGATGTTAGGACA CTACCCAATGCCTCAACCGTGGACAATATTCGCTCCATCTTTG GAAATGCTGTTAGTCGGTATGTCGATAACCTATATA | 3060 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TATATAGGTTATCGACATACCGACTAACAGCATTTCCAAAGAT GGAGCGAATATTGTCCA**C**GGTTGAGGCATTGGGTAGTGTCCT AACATCAGCTACTGTCTCTCCTTGCTGATAAACAAA | 3061 |
| | CCTCAACC**G**TGGACAAT | 3062 |
| | ATTGTCCA**C**GGTTGAGG | 3063 |
| Non-polyposis colorectal cancer Arg217Cys CGC-TGC | CAAGGAGAGACAGTAGCTGATGTTAGGACACTACCCAATGCC TCAACCGTGGACAATATT**C**GCTCCATCTTTGGAAATGCTGTTA GTCGGTATGTCGATAACCTATATAAAAAAATCTTTT | 3064 |
| | AAAAGATTTTTTTATATAGGTTATCGACATACCGACTAACAGCA TTTCCAAAGATGGAGC**G**AATATTGTCCACGGTTGAGGCATTG GGTAGTGTCCTAACATCAGCTACTGTCTCTCCTTG | 3065 |
| | ACAATATT**C**GCTCCATC | 3066 |
| | GATGGAGC**G**AATATTGT | 3067 |
| Non-polyposis colorectal cancer Ile219Val ATC-GTC | GAGACAGTAGCTGATGTTAGGACACTACCCAATGCCTCAACC GTGGACAATATTCGCTCC**A**TCTTTGGAAATGCTGTTAGTCGGT ATGTCGATAACCTATATAAAAAAATCTTTTACATTT | 3068 |
| | AAATGTAAAAGATTTTTTTATATAGGTTATCGACATACCGACTA ACAGCATTTCCAAAGA**T**GGAGCGAATATTGTCCACGGTTGAG GCATTGGGTAGTGTCCTAACATCAGCTACTGTCTC | 3069 |
| | TTCGCTCC**A**TCTTTGGA | 3070 |
| | TCCAAAGA**T**GGAGCGAA | 3071 |
| Non-polyposis colorectal cancer Gly244Asp GGT-GAT | CTAATAGAGAACTGATAGAAATTGGATGTGAGGATAAAACCCT AGCCTTCAAAATGAATG**G**TTACATATCCAATGCAAACTACTCA GTGAAGAAGTGCATCTTCTTACTCTTCATCAACCG | 3072 |
| | CGGTTGATGAAGAGTAAGAAGATGCACTTCTTCACTGAGTAG TTTGCATTGGATATGTAA**C**CATTCATTTTGAAGGCTAGGGTTT TATCCTCACATCCAATTTCTATCAGTTCTCTATTAG | 3073 |
| | AATGAATG**G**TTACATAT | 3074 |
| | ATATGTAA**C**CATTCATT | 3075 |
| Non-polyposis colorectal cancer Ser252Term TCA-TAA | GATGTGAGGATAAAACCCTAGCCTTCAAAATGAATGGTTACAT ATCCAATGCAAACTACT**C**AGTGAAGAAGTGCATCTTCTTACTC TTCATCAACCGTAAGTTAAAAAGAACCACATGGGA | 3076 |
| | TCCCATGTGGTTCTTTTTAACTTACGGTTGATGAAGAGTAAGA AGATGCACTTCTTCACT**G**AGTAGTTTGCATTGGATATGTAACC ATTCATTTTGAAGGCTAGGGTTTTATCCTCACATC | 3077 |
| | AAACTACT**C**AGTGAAGA | 3078 |
| | TCTTCACT**G**AGTAGTTT | 3079 |
| Non-polyposis colorectal cancer Glu268Gly GAA-GGA | CACCCCTCAGGACAGTTTTGAACTGGTTGCTTTCTTTTTATTG TTTAGATCGTCTGGTAG**A**ATCAACTTCCTTGAGAAAAGCCATA GAAACAGTGTATGCAGCCTATTTGCCCAAAAACAC | 3080 |
| | GTGTTTTTGGGCAAATAGGCTGCATACACTGTTTCTATGGCTT TTCTCAAGGAAGTTGAT**T**CTACCAGACGATCTAAACAATAAAA AGAAAGCAACCAGTTCAAAACTGTCCTGAGGGGTG | 3081 |
| | TCTGGTAG**A**ATCAACTT | 3082 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AAGTTGATTCTACCAGA | 3083 |
| Non-polyposis colorectal cancer Ser269Term TCA-TGA | CCCTCAGGACAGTTTTGAACTGGTTGCTTTCTTTTTATTGTTTA GATCGTCTGGTAGAATCAACTTCCTTGAGAAAAGCCATAGAAA CAGTGTATGCAGCCTATTTGCCCAAAAACACACA | 3084 |
| | TGTGTGTTTTTGGGCAAATAGGCTGCATACACTGTTTCTATGG CTTTTCTCAAGGAAGTTGATTCTACCAGACGATCTAAACAATA AAAAGAAAGCAACCAGTTCAAAACTGTCCTGAGGG | 3085 |
| | GGTAGAATCAACTTCCT | 3086 |
| | AGGAAGTTGATTCTACC | 3087 |
| Non-polyposis colorectal cancer Glu297Term GAA-TAA | CTTTTTCTCCCCCTCCCACTATCTAAGGTAATTGTTCTCTCTTA TTTTCCTGACAGTTTAGAAATCAGTCCCCAGAATGTGGATGTT AATGTGCACCCCACAAAGCATGAAGTTCACTTCC | 3088 |
| | GGAAGTGAACTTCATGCTTTGTGGGGTGCACATTAACATCCA CATTCTGGGGACTGATTTCTAAACTGTCAGGAAAATAAGAGAG AACAATTACCTTAGATAGTGGGAGGGGGAGAAAAAG | 3089 |
| | ACAGTTTAGAAATCAGT | 3090 |
| | ACTGATTTCTAAACTGT | 3091 |
| Non-polyposis colorectal cancer Gln301Term CAG-TAG | CTCCCACTATCTAAGGTAATTGTTCTCTCTTATTTTCCTGACAG TTTAGAAATCAGTCCCCAGAATGTGGATGTTAATGTGCACCCC ACAAAGCATGAAGTTCACTTCCTGCACGAGGAGA | 3092 |
| | TCTCCTCGTGCAGGAAGTGAACTTCATGCTTTGTGGGGTGCA CATTAACATCCACATTCTGGGGACTGATTTCTAAACTGTCAGG AAAATAAGAGAGAACAATTACCTTAGATAGTGGGAG | 3093 |
| | TCAGTCCCCAGAATGTG | 3094 |
| | CACATTCTGGGGACTGA | 3095 |
| Non-polyposis colorectal cancer Val326Ala GTG-GCG | ATGTGCACCCCACAAAGCATGAAGTTCACTTCCTGCACGAGG AGAGCATCCTGGAGCGGGTGCAGCAGCACATCGAGAGCAAG CTCCTGGGCTCCAATTCCTCCAGGATGTACTTCACCCA | 3096 |
| | TGGGTGAAGTACATCCTGGAGGAATTGGAGCCCAGGAGCTT GCTCTCGATGTGCTGCTGCACCCGCTCCAGGATGCTCTCCT CGTGCAGGAAGTGAACTTCATGCTTTGTGGGGTGCACAT | 3097 |
| | GGAGCGGGTGCAGCAGC | 3098 |
| | GCTGCTGCACCCGCTCC | 3099 |
| Non-polyposis colorectal cancer His329Pro CAC-CCC | CCACAAAGCATGAAGTTCACTTCCTGCACGAGGAGAGCATCC TGGAGCGGGTGCAGCAGCACATCGAGAGCAAGCTCCTGGGC TCCAATTCCTCCAGGATGTACTTCACCCAGGTCAGGGC | 3100 |
| | GCCCTGACCTGGGTGAAGTACATCCTGGAGGAATTGGAGCC CAGGAGCTTGCTCTCGATGTGCTGCTGCACCCGCTCCAGGA TGCTCTCCTCGTGCAGGAAGTGAACTTCATGCTTTGTGG | 3101 |
| | GCAGCAGCACATCGAGA | 3102 |
| | TCTCGATGTGCTGCTGC | 3103 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non-polyposis colorectal cancer Val384Asp GTT-GAT | CAAGTCTGACCTCGTCTTCTACTTCTGGAAGTAGTGATAAGGT CTATGCCCACCAGATGGTTCGTACAGATTCCCGGGAACAGAA GCTTGATGCATTTCTGCAGCCTCTGAGCAAACCCCT | 3104 |
| | AGGGGTTTGCTCAGAGGCTGCAGAAATGCATCAAGCTTCTGT TCCCGGGAATCTGTACGAACCATCTGGTGGGCATAGACCTTA TCACTACTTCCAGAAGTAGAAGACGAGGTCAGACTTG | 3105 |
| | CCAGATGGTTCGTACAG | 3106 |
| | CTGTACGAACCATCTGG | 3107 |
| Non-polyposis colorectal cancer Ala441Thr GCT-ACT | AGTGGCAGGGCTAGGCAGCAAGATGAGGAGATGCTTGAACT CCCAGCCCCTGCTGAAGTGGCTGCCAAAAATCAGAGCTTGGA GGGGGATACAACAAAGGGGACTTCAGAAATGTCAGAGA | 3108 |
| | TCTCTGACATTTCTGAAGTCCCCTTTGTTGTATCCCCCTCCAA GCTCTGATTTTTGGCAGCCACTTCAGCAGGGGCTGGGAGTTC AAGCATCTCCTCATCTTGCTGCCTAGCCCTGCCACT | 3109 |
| | CTGAAGTGGCTGCCAAA | 3110 |
| | TTTGGCAGCCACTTCAG | 3111 |
| Non-polyposis colorectal cancer Arg487Term CGA-TGA | CTTCATTGCAGAAAGAGACATCGGGAAGATTCTGATGTGGAA ATGGTGGAAGATGATTCCCGAAAGGAAATGACTGCAGCTTGT ACCCCCCGGAGAAGGATCATTAACCTCACTAGTGTTT | 3112 |
| | AAACACTAGTGAGGTTAATGATCCTTCTCCGGGGGGTACAAG CTGCAGTCATTTCCTTTCGGGAATCATCTTCCACCATTTCCAC ATCAGAATCTTCCCGATGTCTCTTTCTGCAATGAAG | 3113 |
| | ATGATTCCCGAAAGGAA | 3114 |
| | TTCCTTTCGGGAATCAT | 3115 |
| Non-polyposis colorectal cancer Ala492Thr GCA-ACA | AGACATCGGGAAGATTCTGATGTGGAAATGGTGGAAGATGAT TCCCGAAAGGAAATGACTGCAGCTTGTACCCCCCGGAGAAG GATCATTAACCTCACTAGTGTTTTGAGTCTCCAGGAAG | 3116 |
| | CTTCCTGGAGACTCAAAACACTAGTGAGGTTAATGATCCTTCT CCGGGGGGTACAAGCTGCAGTCATTTCCTTTCGGGAATCATC TTCCACCATTTCCACATCAGAATCTTCCCGATGTCT | 3117 |
| | AAATGACTGCAGCTTGT | 3118 |
| | ACAAGCTGCAGTCATTT | 3119 |
| Non-polyposis colorectal cancer Val506Ala GTT-GCT | CCCGAAAGGAAATGACTGCAGCTTGTACCCCCCGGAGAAGG ATCATTAACCTCACTAGTGTTTTGAGTCTCCAGGAAGAAATTA ATGAGCAGGGACATGAGGGTACGTAAACGCTGTGGCC | 3120 |
| | GGCCACAGCGTTTACGTACCCTCATGTCCCTGCTCATTAATTT CTTCCTGGAGACTCAAAACACTAGTGAGGTTAATGATCCTTCT CCGGGGGGTACAAGCTGCAGTCATTTCCTTTCGGG | 3121 |
| | CACTAGTGTTTTGAGTC | 3122 |
| | GACTCAAAACACTAGTG | 3123 |
| Non-polyposis colorectal cancer Gln542Leu CAG-CTG | GGGAGATGTTGCATAACCACTCCTTCGTGGGCTGTGTGAATC CTCAGTGGGCCTTGGCACAGCATCAAACCAAGTTATACCTTC TCAACACCACCAAGCTTAGGTAAATCAGCTGAGTGTG | 3124 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CACACTCAGCTGATTTACCTAAGCTTGGTGGTGTTGAGAAGG TATAACTTGGTTTGATGCTGTGCCAAGGCCCACTGAGGATTC ACACAGCCCACGAAGGAGTGGTTATGCAACATCTCCC | 3125 |
| | CTTGGCACAGCATCAAA | 3126 |
| | TTTGATGCTGTGCCAAG | 3127 |
| Non-polyposis colorectal cancer Leu549Pro CTT-CCT | CCTTCGTGGGCTGTGTGAATCCTCAGTGGGCCTTGGCACAG CATCAAACCAAGTTATACCTTCTCAACACCACCAAGCTTAGGT AAATCAGCTGAGTGTGTGAACAAGCAGAGCTACTACA | 3128 |
| | TGTAGTAGCTCTGCTTGTTCACACACTCAGCTGATTTACCTAA GCTTGGTGGTGTTGAGAAGGTATAACTTGGTTTGATGCTGTG CCAAGGCCCACTGAGGATTCACACAGCCCACGAAGG | 3129 |
| | GTTATACCTTCTCAACA | 3130 |
| | TGTTGAGAAGGTATAAC | 3131 |
| Non-polyposis colorectal cancer Asn551Thr AAC-ACC | TGGGCTGTGTGAATCCTCAGTGGGCCTTGGCACAGCATCAAA CCAAGTTATACCTTCTCAACACCACCAAGCTTAGGTAAATCAG CTGAGTGTGTGAACAAGCAGAGCTACTACAACAATG | 3132 |
| | CATTGTTGTAGTAGCTCTGCTTGTTCACACACTCAGCTGATTT ACCTAAGCTTGGTGGTGTTGAGAAGGTATAACTTGGTTTGATG CTGTGCCAAGGCCCACTGAGGATTCACACAGCCCA | 3133 |
| | CCTTCTCAACACCACCA | 3134 |
| | TGGTGGTGTTGAGAAGG | 3135 |
| Non-polyposis colorectal cancer Gln562Term CAG-TAG | ATGAATTCAGCTTTTCCTTAAAGTCACTTCATTTTTATTTTCAG TGAAGAACTGTTCTACCAGATACTCATTTATGATTTTGCCAATT TTGGTGTTCTCAGGTTATCGGTAAGTTTAGATC | 3136 |
| | GATCTAAACTTACCGATAACCTGAGAACACCAAAATTGGCAAA ATCATAAATGAGTATCTGGTAGAACAGTTCTTCACTGAAAATA AAAATGAAGTGACTTTAAGGAAAAGCTGAATTCAT | 3137 |
| | TGTTCTACCAGATACTC | 3138 |
| | GAGTATCTGGTAGAACA | 3139 |
| Non-polyposis colorectal cancer Ile565Phe ATT-TTT | GCTTTTCCTTAAAGTCACTTCATTTTTATTTTCAGTGAAGAACT GTTCTACCAGATACTCATTTATGATTTTGCCAATTTTGGTGTTC TCAGGTTATCGGTAAGTTTAGATCCTTTTCACT | 3140 |
| | AGTGAAAAGGATCTAAACTTACCGATAACCTGAGAACACCAAA ATTGGCAAAATCATAAATGAGTATCTGGTAGAACAGTTCTTCA CTGAAAATAAAAATGAAGTGACTTTAAGGAAAAGC | 3141 |
| | AGATACTCATTTATGAT | 3142 |
| | ATCATAAATGAGTATCT | 3143 |
| Non-polyposis colorectal cancer Leu574Pro CTC-CCC | TTTTCAGTGAAGAACTGTTCTACCAGATACTCATTTATGATTTT GCCAATTTTGGTGTTCTCAGGTTATCGGTAAGTTTAGATCCTT TTCACTTCTGAAATTTCAACTGATCGTTTCTGAA | 3144 |
| | TTCAGAAACGATCAGTTGAAATTTCAGAAGTGAAAAGGATCTA AACTTACCGATAACCTGAGAACACCAAAATTGGCAAAATCATA AATGAGTATCTGGTAGAACAGTTCTTCACTGAAAA | 3145 |
| | TGGTGTTCTCAGGTTAT | 3146 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATAACCTG**A**GAACACCA | 3147 |
| Non-polyposis colorectal cancer Leu582Val CTC-GTC | TGGATGCTCCGTTAAAGCTTGCTCCTTCATGTTCTTGCTTCTT CCTAGGAGCCAGCACCG**C**TCTTTGACCTTGCCATGCTTGCCT TAGATAGTCCAGAGAGTGGCTGGACAGAGGAAGATG | 3148 |
| | CATCTTCCTCTGTCCAGCCACTCTCTGGACTATCTAAGGCAA GCATGGCAAGGTCAAAGA**G**CGGTGCTGGCTCCTAGGAAGAA GCAAGAACATGAAGGAGCAAGCTTTAACGGAGCATCCA | 3149 |
| | CAGCACCG**C**TCTTTGAC | 3150 |
| | GTCAAAGA**G**CGGTGCTG | 3151 |
| Non-polyposis colorectal cancer Leu607His CTT-CAT | TGCTTGCCTTAGATAGTCCAGAGAGTGGCTGGACAGAGGAAG ATGGTCCCAAAGAAGGAC**T**TGCTGAATACATTGTTGAGTTTCT GAAGAAGAAGGCTGAGATGCTTGCAGACTATTTCTC | 3152 |
| | GAGAAATAGTCTGCAAGCATCTCAGCCTTCTTCTTCAGAAACT CAACAATGTATTCAGCA**A**GTCCTTCTTTGGGACCATCTTCCTC TGTCCAGCCACTCTCTGGACTATCTAAGGCAAGCA | 3153 |
| | AGAAGGAC**T**TGCTGAAT | 3154 |
| | ATTCAGCA**A**GTCCTTCT | 3155 |
| Non-polyposis colorectal cancer Lys618Term AAG-TAG | ACAGAGGAAGATGGTCCCAAAGAAGGACTTGCTGAATACATT GTTGAGTTTCTGAAGAAG**A**AGGCTGAGATGCTTGCAGACTAT TTCTCTTTGGAAATTGATGAGGTGTGACAGCCATTCT | 3156 |
| | AGAATGGCTGTCACACCTCATCAATTTCCAAAGAGAAATAGTC TGCAAGCATCTCAGCCT**T**CTTCTTCAGAAACTCAACAATGTAT TCAGCAAGTCCTTCTTTGGGACCATCTTCCTCTGT | 3157 |
| | TGAAGAAG**A**AGGCTGAG | 3158 |
| | CTCAGCCT**T**CTTCTTCA | 3159 |
| Non-polyposis colorectal cancer Lys618Thr AAG-ACG | CAGAGGAAGATGGTCCCAAAGAAGGACTTGCTGAATACATTG TTGAGTTTCTGAAGAAGA**A**GGCTGAGATGCTTGCAGACTATTT CTCTTTGGAAATTGATGAGGTGTGACAGCCATTCTT | 3160 |
| | AAGAATGGCTGTCACACCTCATCAATTTCCAAAGAGAAATAGT CTGCAAGCATCTCAGCC**T**TCTTCTTCAGAAACTCAACAATGTA TTCAGCAAGTCCTTCTTTGGGACCATCTTCCTCTG | 3161 |
| | GAAGAAGA**A**GGCTGAGA | 3162 |
| | TCTCAGCC**T**TCTTCTTC | 3163 |
| Non-polyposis colorectal cancer Arg659Leu CGA-CTA | TACCCCTTCTGATTGACAACTATGTGCCCCCTTTGGAGGGAC TGCCTATCTTCATTCTTC**G**ACTAGCCACTGAGGTCAGTGATCA AGCAGATACTAAGCATTTCGGTACATGCATGTGTGC | 3164 |
| | GCACACATGCATGTACCGAAATGCTTAGTATCTGCTTGATCAC TGACCTCAGTGGCTAGT**C**GAAGAATGAAGATAGGCAGTCCCT CCAAAGGGGGCACATAGTTGTCAATCAGAAGGGGTA | 3165 |
| | CATTCTTC**G**ACTAGCCA | 3166 |
| | TGGCTAGT**C**GAAGAATG | 3167 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non-polyposis colorectal cancer Arg659Pro CGA-CCA | TACCCCTTCTGATTGACAACTATGTGCCCCCTTTGGAGGGAC TGCCTATCTTCATTCTTC**G**ACTAGCCACTGAGGTCAGTGATCA AGCAGATACTAAGCATTTCGGTACATGCATGTGTGC | 3168 |
| | GCACACATGCATGTACCGAAATGCTTAGTATCTGCTTGATCAC TGACCTCAGTGGCTAGT**C**GAAGAATGAAGATAGGCAGTCCCT CCAAAGGGGGCACATAGTTGTCAATCAGAAGGGGTA | 3169 |
| | CATTCTTC**G**ACTAGCCA | 3170 |
| | TGGCTAGT**C**GAAGAATG | 3171 |
| Non-polyposis colorectal cancer Arg659Term CGA-TGA | TTACCCCTTCTGATTGACAACTATGTGCCCCCTTTGGAGGGA CTGCCTATCTTCATTCTT**C**GACTAGCCACTGAGGTCAGTGATC AAGCAGATACTAAGCATTTCGGTACATGCATGTGTG | 3172 |
| | CACACATGCATGTACCGAAATGCTTAGTATCTGCTTGATCACT GACCTCAGTGGCTAGTC**G**AAGAATGAAGATAGGCAGTCCCTC CAAAGGGGGCACATAGTTGTCAATCAGAAGGGGTAA | 3173 |
| | TCATTCTT**C**GACTAGCC | 3174 |
| | GGCTAGTC**G**AAGAATGA | 3175 |
| Non-polyposis colorectal cancer Ala681Thr GCT-ACT | TTGGACCAGGTGAATTGGGACGAAGAAAAGGAATGTTTTGAA AGCCTCAGTAAAGAATGC**G**CTATGTTCTATTCCATCCGGAAG CAGTACATATCTGAGGAGTCGACCCTCTCAGGCCAGC | 3176 |
| | GCTGGCCTGAGAGGGTCGACTCCTCAGATATGTACTGCTTCC GGATGGAATAGAACATAG**C**GCATTCTTTACTGAGGCTTTCAAA ACATTCCTTTTCTTCGTCCCAATTCACCTGGTCCAA | 3177 |
| | AAGAATGC**G**CTATGTTC | 3178 |
| | GAACATAG**C**GCATTCTT | 3179 |
| Non-polyposis colorectal cancer Trp712Term TGG-TAG | AGGCTTATGACATCTAATGTGTTTTCCAGAGTGAAGTGCCTGG CTCCATTCCAAACTCCT**G**GAAGTGGACTGTGGAACACATTGT CTATAAAGCCTTGCGCTCACACATTCTGCCTCCTAA | 3180 |
| | TTAGGAGGCAGAATGTGTGAGCGCAAGGCTTTATAGACAATG TGTTCCACAGTCCACTTC**C**AGGAGTTTGGAATGGAGCCAGGC ACTTCACTCTGGAAAACACATTAGATGTCATAAGCCT | 3181 |
| | AAACTCCT**G**GAAGTGGA | 3182 |
| | TCCACTTC**C**AGGAGTTT | 3183 |
| Non-polyposis colorectal cancer Trp714Term TGG-TAG | ATGACATCTAATGTGTTTTCCAGAGTGAAGTGCCTGGCTCCAT TCCAAACTCCTGGAAGT**G**GACTGTGGAACACATTGTCTATAAA GCCTTGCGCTCACACATTCTGCCTCCTAAACATTT | 3184 |
| | AAATGTTTAGGAGGCAGAATGTGTGAGCGCAAGGCTTTATAG ACAATGTGTTCCACAGTC**C**ACTTCCAGGAGTTTGGAATGGAG CCAGGCACTTCACTCTGGAAAACACATTAGATGTCAT | 3185 |
| | CTGGAAGT**G**GACTGTGG | 3186 |
| | CCACAGTC**C**ACTTCCAG | 3187 |
| Non-polyposis colorectal cancer Trp714Term TGG-TGA | TGACATCTAATGTGTTTTCCAGAGTGAAGTGCCTGGCTCCATT CCAAACTCCTGGAAGTG**G**ACTGTGGAACACATTGTCTATAAA GCCTTGCGCTCACACATTCTGCCTCCTAAACATTTC | 3188 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GAAATGTTTAGGAGGCAGAATGTGTGAGCGCAAGGCTTTATA<br>GACAATGTGTTCCACAGT**C**CACTTCCAGGAGTTTGGAATGGA<br>GCCAGGCACTTCACTCTGGAAAACACATTAGATGTCA | 3189 |
| | TGGAAGTG**G**ACTGTGGA | 3190 |
| | TCCACAGT**C**CACTTCCA | 3191 |
| Non-polyposis colorectal cancer<br>Val716Met<br>GTG-ATG | ATCTAATGTGTTTTCCAGAGTGAAGTGCCTGGCTCCATTCCAA<br>ACTCCTGGAAGTGGACT**G**TGGAACACATTGTCTATAAAGCCTT<br>GCGCTCACACATTCTGCCTCCTAAACATTTCACAG | 3192 |
| | CTGTGAAATGTTTAGGAGGCAGAATGTGTGAGCGCAAGGCTT<br>TATAGACAATGTGTTCCA**C**AGTCCACTTCCAGGAGTTTGGAAT<br>GGAGCCAGGCACTTCACTCTGGAAAACACATTAGAT | 3193 |
| | AGTGGACT**G**TGGAACAC | 3194 |
| | GTGTTCCA**C**AGTCCACT | 3195 |
| Non-polyposis colorectal cancer<br>Tyr721Term<br>TAT-TAA | GAGTGAAGTGCCTGGCTCCATTCCAAACTCCTGGAAGTGGAC<br>TGTGGAACACATTGTCTA**T**AAAGCCTTGCGCTCACACATTCTG<br>CCTCCTAAACATTTCACAGAAGATGGAAATATCCTG | 3196 |
| | CAGGATATTTCCATCTTCTGTGAAATGTTTAGGAGGCAGAATG<br>TGTGAGCGCAAGGCTTT**A**TAGACAATGTGTTCCACAGTCCAC<br>TTCCAGGAGTTTGGAATGGAGCCAGGCACTTCACTC | 3197 |
| | ATTGTCTA**T**AAAGCCTT | 3198 |
| | AAGGCTTT**A**TAGACAAT | 3199 |
| Non-polyposis colorectal cancer<br>Lys751Arg<br>AAA-AGA | CTAAACATTTCACAGAAGATGGAAATATCCTGCAGCTTGCTAA<br>CCTGCCTGATCTATACA**A**AGTCTTTGAGAGGTGTTAAATATGG<br>TTATTTATGCACTGTGGGATGTGTTCTTCTTTCTC | 3200 |
| | GAGAAAGAAGAACACATCCCACAGTGCATAAATAACCATATTT<br>AACACCTCTCAAAGACT**T**TGTATAGATCAGGCAGGTTAGCAAG<br>CTGCAGGATATTTCCATCTTCTGTGAAATGTTTAG | 3201 |
| | TCTATACA**A**AGTCTTTG | 3202 |
| | CAAAGACT**T**TGTATAGA | 3203 |
| Non-polyposis colorectal cancer<br>Arg755Trp<br>AGG-TGG | ACAGAAGATGGAAATATCCTGCAGCTTGCTAACCTGCCTGAT<br>CTATACAAAGTCTTTGAG**A**GGTGTTAAATATGGTTATTTATGCA<br>CTGTGGGATGTGTTCTTCTTTCTCTGTATTCCGAT | 3204 |
| | ATCGGAATACAGAGAAAGAAGAACACATCCCACAGTGCATAA<br>ATAACCATATTTAACACC**T**CTCAAAGACTTTGTATAGATCAGG<br>CAGGTTAGCAAGCTGCAGGATATTTCCATCTTCTGT | 3205 |
| | TCTTTGAG**A**GGTGTTAA | 3206 |
| | TTAACACC**T**CTCAAAGA | 3207 |

## EXAMPLE 18
## Human mismatch repair - MSH2

The human MSH2 gene is homologous to the bacterial *mutS* gene, which is involved in mismatch repair. Mutations in the MSH2 gene have been identified in a variety of cancers, including, for

example, ovarian tumors, colorectal cancer, endometrial cancer, uterine cancer. The attached table discloses the correcting oligonucleotide base sequences for the MSH2 oligonucleotides of the invention.

**Table 25**
**MSH2 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non polyposis colorectal cancer Gln252Term CAG-TAG | TTTTCCACAAAAGACATTTATCAGGACCTCAACCGGTTGTTGA AAGGCAAAAAGGGAGAG**C**AGATGAATAGTGCTGTATTGCCAG AAATGGAGAATCAGGTACATGGATTATAAATGTGAA | 3208 |
| | TTCACATTTATAATCCATGTACCTGATTCTCCATTTCTGGCAAT ACAGCACTATTCATCT**G**CTCTCCCTTTTTGCCTTTCAACAACC GGTTGAGGTCCTGATAAATGTCTTTTGTGGAAAA | 3209 |
| | AGGGAGAG**C**AGATGAAT | 3210 |
| | ATTCATCT**G**CTCTCCCT | 3211 |
| Non polyposis colorectal cancer Gln288Term CAG-TAG | TCATCACTGTCTGCGGTAATCAAGTTTTTAGAACTCTTATCAG ATGATTCCAACTTTGGA**C**AGTTTGAACTGACTACTTTTGACTT CAGCCAGTATATGAAATTGGATATTGCAGCAGTCA | 3212 |
| | TGACTGCTGCAATATCCAATTTCATATACTGGCTGAAGTCAAA AGTAGTCAGTTCAAACT**G**TCCAAAGTTGGAATCATCTGATAAG AGTTCTAAAAACTTGATTACCGCAGACAGTGATGA | 3213 |
| | ACTTTGGA**C**AGTTTGAA | 3214 |
| | TTCAAACT**G**TCCAAAGT | 3215 |
| Non polyposis colorectal cancer Ala305Thr GCA-ACA | AACTTTGGACAGTTTGAACTGACTACTTTTGACTTCAGCCAGT ATATGAAATTGGATATT**G**CAGCAGTCAGAGCCCTTAACCTTTT TCAGGTAAAAAAAAAAAAAAAAAAAAAAAAAAAGG | 3216 |
| | CCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACCTGAAAAAGGTTAAG GGCTCTGACTGCTG**C**AATATCCAATTTCATATACTGGCTGAAG TCAAAAGTAGTCAGTTCAAACTGTCCAAAGTT | 3217 |
| | TGGATATT**G**CAGCAGTC | 3218 |
| | GACTGCTG**C**AATATCCA | 3219 |
| Non polyposis colorectal cancer Gly322Asp GGC-GAC | AGCTTGCCATTCTTTCTATTTTATTTTTTGTTTACTAGGGTTCT GTTGAAGATACCACTG**G**CTCTCAGTCTCTGGCTGCCTTGCTG AATAAGTGTAAAACCCCTCAAGGACAAAGACTTGT | 3220 |
| | ACAAGTCTTTGTCCTTGAGGGGTTTTACACTTATTCAGCAAGG CAGCCAGAGACTGAGAG**C**CAGTGGTATCTTCAACAGAACCCT AGTAAACAAAAAATAAAATAGAAAGAATGGCAAGCT | 3221 |
| | TACCACTG**G**CTCTCAGT | 3222 |
| | ACTGAGAG**C**CAGTGGTA | 3223 |
| Non polyposis colorectal cancer Ser323Cys TCT-TGT | TTGCCATTCTTTCTATTTTATTTTTTGTTTACTAGGGTTCTGTTG AAGATACCACTGGCT**C**TCAGTCTCTGGCTGCCTTGCTGAATA AGTGTAAAACCCCTCAAGGACAAAGACTTGTTAA | 3224 |
| | TTAACAAGTCTTTGTCCTTGAGGGGTTTTACACTTATTCAGCA AGGCAGCCAGAGACTGA**G**AGCCAGTGGTATCTTCAACAGAAC CCTAGTAAACAAAAAATAAAATAGAAAGAATGGCAA | 3225 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CACTGGCTCTCAGTCTC | 3226 |
| | GAGACTGAGAGCCAGTG | 3227 |
| Non polyposis colorectal cancer Arg383Term CGA-TGA | GTGGAAGCTTTTGTAGAAGATGCAGAATTGAGGCAGACTTTA CAAGAAGATTTACTTCGTCGATTCCCAGATCTTAACCGACTTG CCAAGAAGTTTCAAAGACAAGCAGCAAACTTACAAG | 3228 |
| | CTTGTAAGTTTGCTGCTTGTCTTTGAAACTTCTTGGCAAGTCG GTTAAGATCTGGGAATCGACGAAGTAAATCTTCTTGTAAAGTC TGCCTCAATTCTGCATCTTCTACAAAAGCTTCCAC | 3229 |
| | TACTTCGTCGATTCCCA | 3230 |
| | TGGGAATCGACGAAGTA | 3231 |
| Non polyposis colorectal cancer Gln397Term CAA-TAA | CAAGAAGATTTACTTCGTCGATTCCCAGATCTTAACCGACTTG CCAAGAAGTTTCAAAGACAAGCAGCAAACTTACAAGATTGTTA CCGACTCTATCAGGGTATAAATCAACTACCTAATG | 3232 |
| | CATTAGGTAGTTGATTTATACCCTGATAGAGTCGGTAACAATC TTGTAAGTTTGCTGCTTGTCTTTGAAACTTCTTGGCAAGTCGG TTAAGATCTGGGAATCGACGAAGTAAATCTTCTTG | 3233 |
| | TTCAAAGACAAGCAGCA | 3234 |
| | TGCTGCTTGTCTTTGAA | 3235 |
| Non polyposis colorectal cancer Arg406Term CGA-TGA | GATCTTAACCGACTTGCCAAGAAGTTTCAAAGACAAGCAGCA AACTTACAAGATTGTTACCGACTCTATCAGGGTATAAATCAAC TACCTAATGTTATACAGGCTCTGGAAAAACATGAAG | 3236 |
| | CTTCATGTTTTTCCAGAGCCTGTATAACATTAGGTAGTTGATTT ATACCCTGATAGAGTCGGTAACAATCTTGTAAGTTTGCTGCTT GTCTTTGAAACTTCTTGGCAAGTCGGTTAAGATC | 3237 |
| | ATTGTTACCGACTCTAT | 3238 |
| | ATAGAGTCGGTAACAAT | 3239 |
| Non polyposis colorectal cancer Gln419Term CAG-TAG | GCAAACTTACAAGATTGTTACCGACTCTATCAGGGTATAAATC AACTACCTAATGTTATACAGGCTCTGGAAAAACATGAAGGTAA CAAGTGATTTTGTTTTTTTGTTTTCCTTCAACTCA | 3240 |
| | TGAGTTGAAGGAAAACAAAAAAAACAAAATCACTTGTTACCTTC ATGTTTTTCCAGAGCCTGTATAACATTAGGTAGTTGATTTATAC CCTGATAGAGTCGGTAACAATCTTGTAAGTTTGC | 3241 |
| | ATGTTATACAGGCTCTG | 3242 |
| | CAGAGCCTGTATAACAT | 3243 |
| Non polyposis colorectal cancer Gln429Term CAG-TAG | TATTCTGTAAAATGAGATCTTTTTATTTGTTTGTTTTACTACTTT CTTTTAGGAAAACACCAGAAATTATTGTTGGCAGTTTTTGTGA CTCCTCTTACTGATCTTCGTTCTGACTTCTCCA | 3244 |
| | TGGAGAAGTCAGAACGAAGATCAGTAAGAGGAGTCACAAAAA CTGCCAACAATAATTTCTGGTGTTTTCCTAAAAGAAAGTAGTA AAACAAACAAATAAAAAGATCTCATTTTACAGAATA | 3245 |
| | GAAAACACCAGAAATTA | 3246 |
| | TAATTTCTGGTGTTTTC | 3247 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non polyposis colorectal cancer Leu458Term TTA-TGA | CTCCTCTTACTGATCTTCGTTCTGACTTCTCCAAGTTTCAGGA AATGATAGAAACAACTTTAGATATGGATCAGGTATGCAATATA CTTTTTAATTTAAGCAGTAGTTATTTTTAAAAAGC | 3248 |
| | GCTTTTTAAAAATAACTACTGCTTAAATTAAAAAGTATATTGCA TACCTGATCCATATCTAAAGTTGTTTCTATCATTTCCTGAAACT TGGAGAAGTCAGAACGAAGATCAGTAAGAGGAG | 3249 |
| | AACAACTTTAGATATGG | 3250 |
| | CCATATCTAAAGTTGTT | 3251 |
| Non polyposis colorectal cancer Gln518Term CAG-TAG | TTTCTTCTTGATTATCAAGGCTTGGACCCTGGCAAACAGATTA AACTGGATTCCAGTGCACAGTTTGGATATTACTTTCGTGTAAC CTGTAAGGAAGAAAAAGTCCTTCGTAACAATAAAA | 3252 |
| | TTTTATTGTTACGAAGGACTTTTTCTTCCTTACAGGTTACACGA AAGTAATATCCAAACTGTGCACTGGAATCCAGTTTAATCTGTT TGCCAGGGTCCAAGCCTTGATAATCAAGAAGAAA | 3253 |
| | CCAGTGCACAGTTTGGA | 3254 |
| | TCCAAACTGTGCACTGG | 3255 |
| Non polyposis colorectal cancer Arg524Pro CGT-CCT | GCTTGGACCCTGGCAAACAGATTAAACTGGATTCCAGTGCAC AGTTTGGATATTACTTTCGTGTAACCTGTAAGGAAGAAAAAGT CCTTCGTAACAATAAAAACTTTAGTACTGTAGATAT | 3256 |
| | ATATCTACAGTACTAAAGTTTTTATTGTTACGAAGGACTTTTTC TTCCTTACAGGTTACACGAAAGTAATATCCAAACTGTGCACTG GAATCCAGTTTAATCTGTTTGCCAGGGTCCAAGC | 3257 |
| | TTACTTTCGTGTAACCT | 3258 |
| | AGGTTACACGAAAGTAA | 3259 |
| Non polyposis colorectal cancer Glu562Val GAG-GTG | TTAATATTTTTAATAAAACTGTTATTTCGATTTGCAGCAAATTGA CTTCTTTAAATGAAGAGTATACCAAAAATAAAACAGAATATGAA GAAGCCCAGGATGCCATTGTTAAAGAAATTGT | 3260 |
| | ACAATTTCTTTAACAATGGCATCCTGGGCTTCTTCATATTCTGT TTTATTTTTGGTATACTCTTCATTTAAAGAAGTCAATTTGCTGC AAATCGAAATAACAGTTTTATTAAAAATATTAA | 3261 |
| | AAATGAAGAGTATACCA | 3262 |
| | TGGTATACTCTTCATTT | 3263 |
| Glioma Glu580Term GAA-TAA | AATGAAGAGTATACCAAAAATAAAACAGAATATGAAGAAGCCC AGGATGCCATTGTTAAAGAAATTGTCAATATTTCTTCAGGTAAA CTTAATAGAACTAATAATGTTCTGAATGTCACCT | 3264 |
| | AGGTGACATTCAGAACATTATTAGTTCTATTAAGTTTACCTGAA GAAATATTGACAATTTCTTTAACAATGGCATCCTGGGCTTCTT CATATTCTGTTTTATTTTTGGTATACTCTTCATT | 3265 |
| | TTGTTAAAGAAATTGTC | 3266 |
| | GACAATTTCTTTAACAA | 3267 |
| Non polyposis colorectal cancer Gln601Term CAG-TAG | TGTTTTTATTTTTATACAGGCTATGTAGAACCAATGCAGACACT CAATGATGTGTTAGCTCAGCTAGATGCTGTTGTCAGCTTTGCT CACGTGTCAAATGGAGCACCTGTTCCATATGTAC | 3268 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GTACATATGGAACAGGTGCTCCATTTGACACGTGAGCAAAGC<br>TGACAACAGCATCTAGCTGAGCTAACACATCATTGAGTGTCTG<br>CATTGGTTCTACATAGCCTGTATAAAAATAAAAACA | 3269 |
| | TGTTAGCTCAGCTAGAT | 3270 |
| | ATCTAGCTGAGCTAACA | 3271 |
| Non polyposis colorectal cancer Tyr619Term TAT-TAG | AGCTCAGCTAGATGCTGTTGTCAGCTTTGCTCACGTGTCAAAT<br>GGAGCACCTGTTCCATATGTACGACCAGCCATTTTGGAGAAA<br>GGACAAGGAAGAATTATATTAAAAGCATCCAGGCAT | 3272 |
| | ATGCCTGGATGCTTTTAATATAATTCTTCCTTGTCCTTTCTCCA<br>AAATGGCTGGTCGTACATATGGAACAGGTGCTCCATTTGACA<br>CGTGAGCAAAGCTGACAACAGCATCTAGCTGAGCT | 3273 |
| | GTTCCATATGTACGACC | 3274 |
| | GGTCGTACATATGGAAC | 3275 |
| Non polyposis colorectal cancer Arg621Term CGA-TGA | CAGCTAGATGCTGTTGTCAGCTTTGCTCACGTGTCAAATGGA<br>GCACCTGTTCCATATGTACGACCAGCCATTTTGGAGAAAGGA<br>CAAGGAAGAATTATATTAAAAGCATCCAGGCATGCTT | 3276 |
| | AAGCATGCCTGGATGCTTTTAATATAATTCTTCCTTGTCCTTTC<br>TCCAAAATGGCTGGTCGTACATATGGAACAGGTGCTCCATTT<br>GACACGTGAGCAAAGCTGACAACAGCATCTAGCTG | 3277 |
| | CATATGTACGACCAGCC | 3278 |
| | GGCTGGTCGTACATATG | 3279 |
| Non polyposis colorectal cancer Pro622Leu CCA-CTA | TAGATGCTGTTGTCAGCTTTGCTCACGTGTCAAATGGAGCAC<br>CTGTTCCATATGTACGACCAGCCATTTTGGAGAAAGGACAAG<br>GAAGAATTATATTAAAAGCATCCAGGCATGCTTGTGT | 3280 |
| | ACACAAGCATGCCTGGATGCTTTTAATATAATTCTTCCTTGTC<br>CTTTCTCCAAAATGGCTGGTCGTACATATGGAACAGGTGCTC<br>CATTTGACACGTGAGCAAAGCTGACAACAGCATCTA | 3281 |
| | TGTACGACCAGCCATTT | 3282 |
| | AAATGGCTGGTCGTACA | 3283 |
| Non polyposis colorectal cancer Ala636Pro GCA-CCA | CCTGTTCCATATGTACGACCAGCCATTTTGGAGAAAGGACAA<br>GGAAGAATTATATTAAAAGCATCCAGGCATGCTTGTGTTGAAG<br>TTCAAGATGAAATTGCATTTATTCCTAATGACGTAT | 3284 |
| | ATACGTCATTAGGAATAAATGCAATTTCATCTTGAACTTCAACA<br>CAAGCATGCCTGGATGCTTTTAATATAATTCTTCCTTGTCCTTT<br>CTCCAAAATGGCTGGTCGTACATATGGAACAGG | 3285 |
| | TATTAAAAGCATCCAGG | 3286 |
| | CCTGGATGCTTTTAATA | 3287 |
| Non polyposis colorectal cancer His639Arg CAT-CGT | ATGTACGACCAGCCATTTTGGAGAAAGGACAAGGAAGAATTA<br>TATTAAAAGCATCCAGGCATGCTTGTGTTGAAGTTCAAGATGA<br>AATTGCATTTATTCCTAATGACGTATACTTTGAAAA | 3288 |
| | TTTTCAAAGTATACGTCATTAGGAATAAATGCAATTTCATCTTG<br>AACTTCAACACAAGCATGCCTGGATGCTTTTAATATAATTCTTC<br>CTTGTCCTTTCTCCAAAATGGCTGGTCGTACAT | 3289 |
| | ATCCAGGCATGCTTGTG | 3290 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CACAAGCATGCCTGGAT | 3291 |
| Non polyposis colorectal cancer His639Tyr CAT-TAT | TATGTACGACCAGCCATTTTGGAGAAAGGACAAGGAAGAATT ATATTAAAAGCATCCAGGCATGCTTGTGTTGAAGTTCAAGATG AAATTGCATTTATTCCTAATGACGTATACTTTGAAA | 3292 |
| | TTTCAAAGTATACGTCATTAGGAATAAATGCAATTTCATCTTGA ACTTCAACACAAGCATGCCTGGATGCTTTTAATATAATTCTTC CTTGTCCTTTCTCCAAAATGGCTGGTCGTACATA | 3293 |
| | CATCCAGGCATGCTTGT | 3294 |
| | ACAAGCATGCCTGGATG | 3295 |
| Non polyposis colorectal cancer Glu647Lys GAA-AAA | AAAGGACAAGGAAGAATTATATTAAAAGCATCCAGGCATGCTT GTGTTGAAGTTCAAGATGAAATTGCATTTATTCCTAATGACGT ATACTTTGAAAAAGATAAACAGATGTTCCACATCA | 3296 |
| | TGATGTGGAACATCTGTTTATCTTTTTCAAAGTATACGTCATTA GGAATAAATGCAATTTCATCTTGAACTTCAACACAAGCATGCC TGGATGCTTTTAATATAATTCTTCCTTGTCCTTT | 3297 |
| | TTCAAGATGAAATTGCA | 3298 |
| | TGCAATTTCATCTTGAA | 3299 |
| Non polyposis colorectal cancer Tyr656Term TAC-TAG | ATCCAGGCATGCTTGTGTTGAAGTTCAAGATGAAATTGCATTT ATTCCTAATGACGTATACTTTGAAAAAGATAAACAGATGTTCCA CATCATTACTGGTAAAAAACCTGGTTTTTGGGCT | 3300 |
| | AGCCCAAAAACCAGGTTTTTTACCAGTAATGATGTGGAACATC TGTTTATCTTTTTCAAAGTATACGTCATTAGGAATAAATGCAAT TTCATCTTGAACTTCAACACAAGCATGCCTGGAT | 3301 |
| | GACGTATACTTTGAAAA | 3302 |
| | TTTTCAAAGTATACGTC | 3303 |
| Non polyposis colorectal cancer Gly674Asp GGT-GAT | GAAAGAAGTTTAAAATCTTGCTTTCTGATATAATTTGTTTTGTA GGCCCCAATATGGGAGGTAAATCAACATATATTCGACAAACT GGGGTGATAGTACTCATGGCCCAAATTGGGTGTTT | 3304 |
| | AAACACCCAATTTGGGCCATGAGTACTATCACCCCAGTTTGTC GAATATATGTTGATTTACCTCCCATATTGGGGCCTACAAAACA AATTATATCAGAAAGCAAGATTTTAAACTTCTTTC | 3305 |
| | TATGGGAGGTAAATCAA | 3306 |
| | TTGATTTACCTCCCATA | 3307 |
| Non polyposis colorectal cancer Arg680Term CGA-TGA | TTGCTTTCTGATATAATTTGTTTTGTAGGCCCCAATATGGGAG GTAAATCAACATATATTCGACAAACTGGGGTGATAGTACTCAT GGCCCAAATTGGGTGTTTTGTGCCATGTGAGTCAG | 3308 |
| | CTGACTCACATGGCACAAAACACCCAATTTGGGCCATGAGTA CTATCACCCCAGTTTGTCGAATATATGTTGATTTACCTCCCAT ATTGGGGCCTACAAAACAAATTATATCAGAAAGCAA | 3309 |
| | CATATATTCGACAAACT | 3310 |
| | AGTTTGTCGAATATATG | 3311 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non polyposis colorectal cancer Gly692Arg GGG-CGG | ATGGGAGGTAAATCAACATATATTCGACAAACTGGGGTGATA GTACTCATGGCCCAAATTGGGTGTTTTGTGCCATGTGAGTCA GCAGAAGTGTCCATTGTGGACTGCATCTTAGCCCGAG | 3312 |
| | CTCGGGCTAAGATGCAGTCCACAATGGACACTTCTGCTGACT CACATGGCACAAAACACCCAATTTGGGCCATGAGTACTATCA CCCCAGTTTGTCGAATATATGTTGATTTACCTCCCAT | 3313 |
| | CCCAAATTGGGTGTTTT | 3314 |
| | AAAACACCCAATTTGGG | 3315 |
| Non polyposis colorectal cancer Cys697Arg TGT-CGT | ACATATATTCGACAAACTGGGGTGATAGTACTCATGGCCCAAA TTGGGTGTTTTGTGCCATGTGAGTCAGCAGAAGTGTCCATTG TGGACTGCATCTTAGCCCGAGTAGGGGCTGGTGACA | 3316 |
| | TGTCACCAGCCCCTACTCGGGCTAAGATGCAGTCCACAATGG ACACTTCTGCTGACTCACATGGCACAAAACACCCAATTTGGG CCATGAGTACTATCACCCCAGTTTGTCGAATATATGT | 3317 |
| | TTGTGCCATGTGAGTCA | 3318 |
| | TGACTCACATGGCACAA | 3319 |
| Non polyposis colorectal cancer Cys697Phe TGT-TTT | CATATATTCGACAAACTGGGGTGATAGTACTCATGGCCCAAAT TGGGTGTTTTGTGCCATGTGAGTCAGCAGAAGTGTCCATTGT GGACTGCATCTTAGCCCGAGTAGGGGCTGGTGACAG | 3320 |
| | CTGTCACCAGCCCCTACTCGGGCTAAGATGCAGTCCACAATG GACACTTCTGCTGACTCACATGGCACAAAACACCCAATTTGG GCCATGAGTACTATCACCCCAGTTTGTCGAATATATG | 3321 |
| | TGTGCCATGTGAGTCAG | 3322 |
| | CTGACTCACATGGCACA | 3323 |
| Non polyposis colorectal cancer Gln718Term CAA-TAA | GAGTCAGCAGAAGTGTCCATTGTGGACTGCATCTTAGCCCGA GTAGGGGCTGGTGACAGTCAATTGAAAGGAGTCTCCACGTTC ATGGCTGAAATGTTGGAAACTGCTTCTATCCTCAGGT | 3324 |
| | ACCTGAGGATAGAAGCAGTTTCCAACATTTCAGCCATGAACG TGGAGACTCCTTTCAATTGACTGTCACCAGCCCCTACTCGGG CTAAGATGCAGTCCACAATGGACACTTCTGCTGACTC | 3325 |
| | GTGACAGTCAATTGAAA | 3326 |
| | TTTCAATTGACTGTCAC | 3327 |
| Non polyposis colorectal cancer Leu811Term TTA-TGA | CCAATCAGATACCAACTGTTAATAATCTACATGTCACAGCACT CACCACTGAAGAGACCTTAACTATGCTTTATCAGGTGAAGAAA GGTATGTACTATTGGAGTACTCTAAATTCAGAACT | 3328 |
| | AGTTCTGAATTTAGAGTACTCCAATAGTACATACCTTTCTTCAC CTGATAAAGCATAGTTAAGGTCTCTTCAGTGGTGAGTGCTGT GACATGTAGATTATTAACAGTTGGTATCTGATTGG | 3329 |
| | AGAGACCTTAACTATGC | 3330 |
| | GCATAGTTAAGGTCTCT | 3331 |
| Non polyposis colorectal cancer Ala834Thr GCT-ACT | TTCCCCAAATTTCTTATAGGTGTCTGTGATCAAAGTTTTGGGA TTCATGTTGCAGAGCTTGCTAATTTCCCTAAGCATGTAATAGA GTGTGCTAAACAGAAAGCCCTGGAACTTGAGGAGT | 3332 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACTCCTCAAGTTCCAGGGCTTTCTGTTTAGCACACTCTATTAC<br>ATGCTTAGGGAAATTAG**C**AAGCTCTGCAACATGAATCCCAAAA<br>CTTTGATCACAGACACCTATAAGAAATTTGGGGAA | 3333 |
| | CAGAGCTT**G**CTAATTTC | 3334 |
| | GAAATTAG**C**AAGCTCTG | 3335 |
| Non polyposis colorectal cancer<br>Gln861Term<br>CAA-TAA | ATAGAGTGTGCTAAACAGAAAGCCCTGGAACTTGAGGAGTTT<br>CAGTATATTGGAGAATCG**C**AAGGATATGATATCATGGAACCAG<br>CAGCAAAGAAGTGCTATCTGGAAAGAGAGGTTTGTC | 3336 |
| | GACAAACCTCTCTTTCCAGATAGCACTTCTTTGCTGCTGGTTC<br>CATGATATCATATCCTT**G**CGATTCTCCAATATACTGAAACTCCT<br>CAAGTTCCAGGGCTTTCTGTTTAGCACACTCTAT | 3337 |
| | GAGAATCG**C**AAGGATAT | 3338 |
| | ATATCCTT**G**CGATTCTC | 3339 |
| Non polyposis colorectal cancer<br>Thr905Arg<br>ACA-AGA | AGGAGTTCCTGTCCAAGGTGAAACAAATGCCCTTTACTGAAAT<br>GTCAGAAGAAAACATCA**C**AATAAAGTTAAAACAGCTAAAAGCT<br>GAAGTAATAGCAAAGAATAATAGCTTTGTAAATGA | 3340 |
| | TCATTTACAAAGCTATTATTCTTTGCTATTACTTCAGCTTTTAG<br>CTGTTTTAACTTTATT**G**TGATGTTTTCTTCTGACATTTCAGTAA<br>AGGGCATTTGTTTCACCTTGGACAGGAACTCCT | 3341 |
| | AAACATCA**C**AATAAAGT | 3342 |
| | ACTTTATT**G**TGATGTTT | 3343 |

**EXAMPLE 19**
**Human mismatch repair - MSH6**

The human MSH6 gene is homologous to the bacterial *mutS* gene, which is involved in mismatch repair. Mutations in the MSH6 gene have been identified in a variety of cancers, including particularly hereditary nonpolyposis colorectal cancer. The attached table discloses the correcting oligonucleotide base sequences for the MSH6 oligonucleotides of the invention.

**Table 26**
**MSH6 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Non-polyposis colorectal cancer<br>Ser144Ile<br>AGC-ATC | GGAAATCAGTCCGTGTTCATGTACAGTTTTTTGATGACAGCCC<br>AACAAGGGGCTGGGTTA**G**CAAAAGGCTTTTAAAGCCATATAC<br>AGGTAAGAGTCACTACTGCCATGTGTGTGTGTTTGT | 3344 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACAAACACACACACATGGCAGTAGTGACTCTTACCTGTATATG GCTTTAAAAGCCTTTTGCTAACCCAGCCCCTTGTTGGGCTGT CATCAAAAAACTGTACATGAACACGGACTGATTTCC | 3345 |
| | CTGGGTTAGCAAAAGGC | 3346 |
| | GCCTTTTGCTAACCCAG | 3347 |
| Endometrial cancer Ser156Term TCA-TGA | CGTGAGCCTCTGCACCCGGCCCTTATTGTTTATAAATACATTT CTTTCTAGGTTCAAAATCAAAGGAAGCCCAGAAGGGAGGTCA TTTTTACAGTGCAAAGCCTGAAATACTGAGAGCAAT | 3348 |
| | ATTGCTCTCAGTATTTCAGGCTTTGCACTGTAAAAATGACCTC CCTTCTGGGCTTCCTTTGATTTTGAACCTAGAAAGAAATGTAT TTATAAACAATAAGGGCCGGGTGCAGAGGCTCACG | 3349 |
| | TTCAAAATCAAAGGAAG | 3350 |
| | CTTCCTTTGATTTTGAA | 3351 |
| Early onset colorectal cancer Tyr214Term TAC-TAG | TTCCAAATTTTGATTTGTTTTTAAATACTCTTTCCTTGCCTGGC AGGTAGGCACAACTTACGTAACAGATAAGAGTGAAGAAGATA ATGAAATTGAGAGTGAAGAGGAAGTACAGCCTAAG | 3352 |
| | CTTAGGCTGTACTTCCTCTTCACTCTCAATTTCATTATCTTCTT CACTCTTATCTGTTACGTAAGTTGTGCCTACCTGCCAGGCAA GGAAAGAGTATTTAAAAACAAATCAAAATTTGGAA | 3353 |
| | ACAACTTACGTAACAGA | 3354 |
| | TCTGTTACGTAAGTTGT | 3355 |
| Endometrial cancer Arg248Term CGA-TGA | GAAGAGGAAGTACAGCCTAAGACACAAGGATCTAGGCGAAGT AGCCGCCAAATAAAAAAACGAAGGGTCATATCAGATTCTGAG AGTGACATTGGTGGCTCTGATGTGGAATTTAAGCCAG | 3356 |
| | CTGGCTTAAATTCCACATCAGAGCCACCAATGTCACTCTCAGA ATCTGATATGACCCTTCGTTTTTTTATTTGGCGGCTACTTCGC CTAGATCCTTGTGTCTTAGGCTGTACTTCCTCTTC | 3357 |
| | TAAAAAAACGAAGGGTC | 3358 |
| | GACCCTTCGTTTTTTTA | 3359 |
| Colorectal cancer Ser285Ile AGT-ATT | TTAAGCCAGACACTAAGGAGGAAGGAAGCAGTGATGAAATAA GCAGTGGAGTGGGGGATAGTGAGAGTGAAGGCCTGAACAGC CCTGTCAAAGTTGCTCGAAAGCGGAAGAGAATGGTGAC | 3360 |
| | GTCACCATTCTCTTCCGCTTTCGAGCAACTTTGACAGGGCTG TTCAGGCCTTCACTCTCACTATCCCCCACTCCACTGCTTATTT CATCACTGCTTCCTTCCTCCTTAGTGTCTGGCTTAA | 3361 |
| | GGGGGATAGTGAGAGTG | 3362 |
| | CACTCTCACTATCCCCC | 3363 |
| Colorectal cancer Gly566Arg GGA-AGA | GAGGAAGATTCTTCTGGCCATACTCGTGCATATGGTGTGTGC TTTGTTGATACTTCACTGGGAAAGTTTTTCATAGGTCAGTTTTC AGATGATCGCCATTGTTCGAGATTTAGGACTCTAG | 3364 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTAGAGTCCTAAATCTCGAACAATGGCGATCATCTGAAAACTG ACCTATGAAAAACTTTCCCAGTGAAGTATCAACAAAGCACACA CCATATGCACGAGTATGGCCAGAAGAATCTTCCTC | 3365 |
| | CTTCACTGGGAAAGTTT | 3366 |
| | AAACTTTCCCAGTGAAG | 3367 |
| Non-polyposis colorectal cancer Gln698Glu CAG-GAG | GAATTGGCCCTCTCTGCTCTAGGTGGTTGTGTCTTCTACCTC AAAAAATGCCTTATTGATCAGGAGCTTTTATCAATGGCTAATTT TGAAGAATATATTCCCTTGGATTCTGACACAGTCA | 3368 |
| | TGACTGTGTCAGAATCCAAGGGAATATATTCTTCAAAATTAGC CATTGATAAAAGCTCCTGATCAATAAGGCATTTTTTGAGGTAG AAGACACAACCACCTAGAGCAGAGAGGGCCAATTC | 3369 |
| | TTATTGATCAGGAGCTT | 3370 |
| | AAGCTCCTGATCAATAA | 3371 |
| Endometrial cancer Gln731Term CAA-TAA | CCCTTGGATTCTGACACAGTCAGCACTACAAGATCTGGTGCT ATCTTCACCAAAGCCTATCAACGAATGGTGCTAGATGCAGTG ACATTAAACAACTTGGAGATTTTTCTGAATGGAACAA | 3372 |
| | TTGTTCCATTCAGAAAAATCTCCAAGTTGTTTAATGTCACTGCA TCTAGCACCATTCGTTGATAGGCTTTGGTGAAGATAGCACCA GATCTTGTAGTGCTGACTGTGTCAGAATCCAAGGG | 3373 |
| | AAGCCTATCAACGAATG | 3374 |
| | CATTCGTTGATAGGCTT | 3375 |
| Colorectal cancer Val800Leu GTT-CTT | GCCCCACTCTGTAACCATTATGCTATTAATGATCGTCTAGATG CCATAGAAGACCTCATGGTTGTGCCTGACAAAATCTCCGAAG TTGTAGAGCTTCTAAAGAAGCTTCCAGATCTTGAGA | 3376 |
| | TCTCAAGATCTGGAAGCTTCTTTAGAAGCTCTACAACTTCGGA GATTTTGTCAGGCACAACCATGAGGTCTTCTATGGCATCTAGA CGATCATTAATAGCATAATGGTTACAGAGTGGGGC | 3377 |
| | ACCTCATGGTTGTGCCT | 3378 |
| | AGGCACAACCATGAGGT | 3379 |
| Colorectal cancer Asp803Gly GAC-GGC | GTAACCATTATGCTATTAATGATCGTCTAGATGCCATAGAAGA CCTCATGGTTGTGCCTGACAAAATCTCCGAAGTTGTAGAGCT TCTAAAGAAGCTTCCAGATCTTGAGAGGCTACTCAG | 3380 |
| | CTGAGTAGCCTCTCAAGATCTGGAAGCTTCTTTAGAAGCTCTA CAACTTCGGAGATTTTGTCAGGCACAACCATGAGGTCTTCTAT GGCATCTAGACGATCATTAATAGCATAATGGTTAC | 3381 |
| | TGTGCCTGACAAAATCT | 3382 |
| | AGATTTTGTCAGGCACA | 3383 |
| Non-polyposis colorectal cancer Tyr850Cys TAC-TGC | CTCCCCTGAAGAGTCCGAACCACCCAGACAGCAGGGCTATAA TGTATGAAGAAACTACATACAGCAAGAAGAAGATTATTGATTT TCTTTCTGCTCTGGAAGGATTCAAAGTAATGTGTAA | 3384 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTACACATTACTTTGAATCCTTCCAGAGCAGAAAGAAAATCAA TAATCTTCTTCTTGCTGTATGTAGTTTCTTCATACATTATAGCC CTGCTGTCTGGGTGGTTCTGACTCTTCAGGGGAG | 3385 |
| | AACTACATACAGCAAGA | 3386 |
| | TCTTGCTGTATGTAGTT | 3387 |
| Colorectal cancer Pro1087Thr CCC-ACC | TATAGTCGAGGGGGTGATGGTCCTATGTGTCGCCCAGTAATT CTGTTGCCGGAAGATACCCCCCCCTTCTTAGAGCTTAAAGGA TCACGCCATCCTTGCATTACGAAGACTTTTTTTGGAG | 3388 |
| | CTCCAAAAAAAAGTCTTCGTAATGCAAGGATGGCGTGATCCTTT AAGCTCTAAGAAGGGGGGGGTATCTTCCGGCAACAGAATTAC TGGGCGACACATAGGACCATCACCCCCTCGACTATA | 3389 |
| | AAGATACCCCCCCCTTC | 3390 |
| | GAAGGGGGGGGTATCTT | 3391 |
| Non-polyposis colorectal cancer Gln1258Term CAA-TAA | ACTATAAAATGTCGTACATTATTTTCAACTCACTACCATTCATT AGTAGAAGATTATTCTCAAAATGTTGCTGTGCGCCTAGGACAT ATGGTATGTGCAAATTGTTTTTTTCCACAAATTC | 3392 |
| | GAATTTGTGGAAAAAAACAATTTGCACATACCATATGTCCTAG GCGCACAGCAACATTTTGAGAATAATCTTCTACTAATGAATGG TAGTGAGTTGAAAATAATGTACGACATTTTATAGT | 3393 |
| | ATTATTCTCAAAATGTT | 3394 |
| | AACATTTTGAGAATAAT | 3395 |

## EXAMPLE 20
## Hyperlipidemia - APOE

Hyperlipidemia is the abnormal elevation of plasma cholesterol and/or triglyceride levels and it is one of the most common diseases. The human apolipoprotein E protein is involved in the transport of endogenous lipids and appears to be crucial for both the direct removal of cholesterol-rich LDL from plasma and conversion of IDL particles to LDL particles. Individuals who either lack apolipoprotein E or who are homozygous for particular alleles of apoE may have have a condition known as dysbetalipoproteinemia, which is characterized by elevated plasma cholesterol and triglyceride levels and an increased risk for atherosclerosis.

In a comprehensive review of apoE variants, de Knijff et al., *Hum. Mutat.* 4:178-194 (1994) found that 30 variants had been characterized, including the most common variant, apoE3. To that time, 14 apoE variants had been found to be associated with familial dysbetalipoproteinemia. The

attached table discloses the correcting oligonucleotide base sequences for the APOE oligonucleotides of the invention.

**Table 27**
**APOE Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Apolipoprotein E<br>Glu13Lys<br>cGAG-AAG | TTGTTCCACACAGGATGCCAGGCCAAGGTGGAGCAAGCGGT<br>GGAGACAGAGCCGGAGCCC**G**AGCTGCGCCAGCAGACCGAG<br>TGGCAGAGCGGCCAGCGCTGGGAACTGGCACTGGGTCGCT | 3396 |
| | AGCGACCCAGTGCCAGTTCCCAGCGCTGGCCGCTCTGCCAC<br>TCGGTCTGCTGGCGCAGCT**C**GGGCTCCGGCTCTGTCTCCAC<br>CGCTTGCTCCACCTTGGCCTGGCATCCTGTGTGGAACAA | 3397 |
| | CGGAGCCC**G**AGCTGCGC | 3398 |
| | GCGCAGCT**C**GGGCTCCG | 3399 |
| Apolipoprotein E<br>Trp20Term<br>TGGc-TGA | CAAGGTGGAGCAAGCGGTGGAGACAGAGCCGGAGCCCGAG<br>CTGCGCCAGCAGACCGAGTG**G**CAGAGCGGCCAGCGCTGGG<br>AACTGGCACTGGGTCGCTTTTGGGATTACCTGCGCTGGGTG | 3400 |
| | CACCCAGCGCAGGTAATCCCAAAAGCGACCCAGTGCCAGTT<br>CCCAGCGCTGGCCGCTCTG**C**CACTCGGTCTGCTGGCGCAGC<br>TCGGGCTCCGGCTCTGTCTCCACCGCTTGCTCCACCTTG | 3401 |
| | ACCGAGTG**G**CAGAGCGG | 3402 |
| | CCGCTCTG**C**CACTCGGT | 3403 |
| Apolipoprotein E<br>Leu28Pro<br>CTG-CCG | CAGAGCCGGAGCCCGAGCTGCGCCAGCAGACCGAGTGGCA<br>GAGCGGCCAGCGCTGGGAAC**T**GGCACTGGGTCGCTTTTGGG<br>ATTACCTGCGCTGGGTGCAGACACTGTCTGAGCAGGTGCA | 3404 |
| | TGCACCTGCTCAGACAGTGTCTGCACCCAGCGCAGGTAATCC<br>CAAAAGCGACCCAGTGCC**A**GTTCCCAGCGCTGGCCGCTCTG<br>CCACTCGGTCTGCTGGCGCAGCTCGGGCTCCGGCTCTG | 3405 |
| | CTGGGAAC**T**GGCACTGG | 3406 |
| | CCAGTGCC**A**GTTCCCAG | 3407 |
| Apolipoprotein E<br>Cys112Arg<br>gTGC-CGC | CGGCTGTCCAAGGAGCTGCAGGCGGCGCAGGCCCGGCTGG<br>GCGCGGACATGGAGGACGTG**T**GCGGCCGCCTGGTGCAGTA<br>CCGCGGCGAGGTGCAGGCCATGCTCGGCCAGAGCACCGAG<br>G | 3408 |
| | CCTCGGTGCTCTGGCCGAGCATGGCCTGCACCTCGCCGCGG<br>TACTGCACCAGGCGGCCGC**A**CACGTCCTCCATGTCCGCGCC<br>CAGCCGGGCCTGCGCCGCCTGCAGCTCCTTGGACAGCCG | 3409 |
| | AGGACGTG**T**GCGGCCGC | 3410 |
| | GCGGCCGC**A**CACGTCCT | 3411 |
| Apolipoprotein E<br>Gly127Asp<br>GGC-GAC | ACATGGAGGACGTGTGCGGCCGCCTGGTGCAGTACCGCGG<br>CGAGGTGCAGGCCATGCTCG**G**CCAGAGCACCGAGGAGCTG<br>CGGGTGCGCCTCGCCTCCCACCTGCGCAAGCTGCGTAAGCG | 3412 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CGCTTACGCAGCTTGCGCAGGTGGGAGGCGAGGCGCACCC<br>GCAGCTCCTCGGTGCTCTGG**C**CGAGCATGGCCTGCACCTCG<br>CCGCGGTACTGCACCAGGCGGCCGCACACGTCCTCCATGT | 3413 |
| | CATGCTCG**G**CCAGAGCA | 3414 |
| | TGCTCTGG**C**CGAGCATG | 3415 |
| Apolipoprotein E<br>Arg136Cys<br>gCGC-TGC | GTGCAGTACCGCGGCGAGGTGCAGGCCATGCTCGGCCAGA<br>GCACCGAGGAGCTGCGGGTG**C**GCCTCGCCTCCCACCTGCG<br>CAAGCTGCGTAAGCGGCTCCTCCGCGATGCCGATGACCTGC | 3416 |
| | GCAGGTCATCGGCATCGCGGAGGAGCCGCTTACGCAGCTTG<br>CGCAGGTGGGAGGCGAGGC**G**CACCCGCAGCTCCTCGGTGC<br>TCTGGCCGAGCATGGCCTGCACCTCGCCGCGGTACTGCAC | 3417 |
| | TGCGGGTG**C**GCCTCGCC | 3418 |
| | GGCGAGGC**G**CACCCGCA | 3419 |
| Apolipoprotein E<br>Arg136His<br>CGC-CAC | TGCAGTACCGCGGCGAGGTGCAGGCCATGCTCGGCCAGAG<br>CACCGAGGAGCTGCGGGTGC**G**CCTCGCCTCCCACCTGCGC<br>AAGCTGCGTAAGCGGCTCCTCCGCGATGCCGATGACCTGCA | 3420 |
| | TGCAGGTCATCGGCATCGCGGAGGAGCCGCTTACGCAGCTT<br>GCGCAGGTGGGAGGCGAGG**C**GCACCCGCAGCTCCTCGGTG<br>CTCTGGCCGAGCATGGCCTGCACCTCGCCGCGGTACTGCA | 3421 |
| | GCGGGTGC**G**CCTCGCCT | 3422 |
| | AGGCGAGG**C**GCACCCGC | 3423 |
| Apolipoprotein E<br>Arg136Ser<br>gCGC-AGC | GTGCAGTACCGCGGCGAGGTGCAGGCCATGCTCGGCCAGA<br>GCACCGAGGAGCTGCGGGTG**C**GCCTCGCCTCCCACCTGCG<br>CAAGCTGCGTAAGCGGCTCCTCCGCGATGCCGATGACCTGC | 3424 |
| | GCAGGTCATCGGCATCGCGGAGGAGCCGCTTACGCAGCTTG<br>CGCAGGTGGGAGGCGAGGC**G**CACCCGCAGCTCCTCGGTGC<br>TCTGGCCGAGCATGGCCTGCACCTCGCCGCGGTACTGCAC | 3425 |
| | TGCGGGTG**C**GCCTCGCC | 3426 |
| | GGCGAGGC**G**CACCCGCA | 3427 |
| Apolipoprotein E<br>Arg142Cys<br>gCGC-TGC | GTGCAGGCCATGCTCGGCCAGAGCACCGAGGAGCTGCGGG<br>TGCGCCTCGCCTCCCACCTG**C**GCAAGCTGCGTAAGCGGCTC<br>CTCCGCGATGCCGATGACCTGCAGAAGCGCCTGGCAGTGT | 3428 |
| | ACACTGCCAGGCGCTTCTGCAGGTCATCGGCATCGCGGAGG<br>AGCCGCTTACGCAGCTTGC**G**CAGGTGGGAGGCGAGGCGCA<br>CCCGCAGCTCCTCGGTGCTCTGGCCGAGCATGGCCTGCAC | 3429 |
| | CCCACCTG**C**GCAAGCTG | 3430 |
| | CAGCTTGC**G**CAGGTGGG | 3431 |
| Apolipoprotein E<br>Arg142Leu<br>CGC-CTC | TGCAGGCCATGCTCGGCCAGAGCACCGAGGAGCTGCGGGT<br>GCGCCTCGCCTCCCACCTGC**G**CAAGCTGCGTAAGCGGCTCC<br>TCCGCGATGCCGATGACCTGCAGAAGCGCCTGGCAGTGTA | 3432 |
| | TACACTGCCAGGCGCTTCTGCAGGTCATCGGCATCGCGGAG<br>GAGCCGCTTACGCAGCTTG**C**GCAGGTGGGAGGCGAGGCGC<br>ACCCGCAGCTCCTCGGTGCTCTGGCCGAGCATGGCCTGCA | 3433 |
| | CCACCTGC**G**CAAGCTGC | 3434 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GCAGCTTGCGCAGGTGG | 3435 |
| Apolipoprotein E Arg145Cys gCGT-TGT | ATGCTCGGCCAGAGCACCGAGGAGCTGCGGGTGCGCCTCG CCTCCCACCTGCGCAAGCTGCGTAAGCGGCTCCTCCGCGAT GCCGATGACCTGCAGAAGCGCCTGGCAGTGTACCAGGCCG | 3436 |
| | CGGCCTGGTACACTGCCAGGCGCTTCTGCAGGTCATCGGCA TCGCGGAGGAGCCGCTTACGCAGCTTGCGCAGGTGGGAGG CGAGGCGCACCCGCAGCTCCTCGGTGCTCTGGCCGAGCAT | 3437 |
| | GCAAGCTGCGTAAGCGG | 3438 |
| | CCGCTTACGCAGCTTGC | 3439 |
| Apolipoprotein E Arg145Pro CGT-CCT | TGCTCGGCCAGAGCACCGAGGAGCTGCGGGTGCGCCTCGC CTCCCACCTGCGCAAGCTGCGTAAGCGGCTCCTCCGCGATG CCGATGACCTGCAGAAGCGCCTGGCAGTGTACCAGGCCGG | 3440 |
| | CCGGCCTGGTACACTGCCAGGCGCTTCTGCAGGTCATCGGC ATCGCGGAGGAGCCGCTTACGCAGCTTGCGCAGGTGGGAG GCGAGGCGCACCCGCAGCTCCTCGGTGCTCTGGCCGAGCA | 3441 |
| | CAAGCTGCGTAAGCGGC | 3442 |
| | GCCGCTTACGCAGCTTG | 3443 |
| Apolipoprotein E Lys146Gln tAAG-CAG | CTCGGCCAGAGCACCGAGGAGCTGCGGGTGCGCCTCGCCT CCCACCTGCGCAAGCTGCGTAAGCGGCTCCTCCGCGATGCC GATGACCTGCAGAAGCGCCTGGCAGTGTACCAGGCCGGGG | 3444 |
| | CCCCGGCCTGGTACACTGCCAGGCGCTTCTGCAGGTCATCG GCATCGCGGAGGAGCCGCTTACGCAGCTTGCGCAGGTGGGA GGCGAGGCGCACCCGCAGCTCCTCGGTGCTCTGGCCGAG | 3445 |
| | AGCTGCGTAAGCGGCTC | 3446 |
| | GAGCCGCTTACGCAGCT | 3447 |
| Apolipoprotein E Lys146Glu tAAG-GAG | CTCGGCCAGAGCACCGAGGAGCTGCGGGTGCGCCTCGCCT CCCACCTGCGCAAGCTGCGTAAGCGGCTCCTCCGCGATGCC GATGACCTGCAGAAGCGCCTGGCAGTGTACCAGGCCGGGG | 3448 |
| | CCCCGGCCTGGTACACTGCCAGGCGCTTCTGCAGGTCATCG GCATCGCGGAGGAGCCGCTTACGCAGCTTGCGCAGGTGGGA GGCGAGGCGCACCCGCAGCTCCTCGGTGCTCTGGCCGAG | 3449 |
| | AGCTGCGTAAGCGGCTC | 3450 |
| | GAGCCGCTTACGCAGCT | 3451 |
| Apolipoprotein E Arg158Cys gCGC-TGC | GCCTCCCACCTGCGCAAGCTGCGTAAGCGGCTCCTCCGCGA TGCCGATGACCTGCAGAAGCGCCTGGCAGTGTACCAGGCCG GGGCCCGCGAGGGCGCCGAGCGCGGCCTCAGCGCCATCC | 3452 |
| | GGATGGCGCTGAGGCCGCGCTCGGCGCCCTCGCGGGCCCC GGCCTGGTACACTGCCAGGCGCTTCTGCAGGTCATCGGCAT CGCGGAGGAGCCGCTTACGCAGCTTGCGCAGGTGGGAGGC | 3453 |
| | TGCAGAAGCGCCTGGCA | 3454 |
| | TGCCAGGCGCTTCTGCA | 3455 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Apolipoprotein E<br>Gln187Glu<br>aCAG-GAG | CGCGAGGGCGCCGAGCGCGGCCTCAGCGCCATCCGCGAGC<br>GCCTGGGGCCCCTGGTGGAA**C**AGGGCCGCGTGCGGGCCGC<br>CACTGTGGGCTCCCTGGCCGGCCAGCCGCTACAGGAGCGG<br>G | 3456 |
| | CCCGCTCCTGTAGCGGCTGGCCGGCCAGGGAGCCCACAGT<br>GGCGGCCCGCACGCGGCCCT**G**TTCCACCAGGGGCCCCAGG<br>CGCTCGCGGATGGCGCTGAGGCCGCGCTCGGCGCCCTCGC<br>G | 3457 |
| | TGGTGGAA**C**AGGGCCGC | 3458 |
| | GCGGCCCT**G**TTCCACCA | 3459 |
| Apolipoprotein E<br>Trp210Term<br>TGG-TAG | TGCGGGCCGCCACTGTGGGCTCCCTGGCCGGCCAGCCGCT<br>ACAGGAGCGGGCCCAGGCCT**G**GGGCGAGCGGCTGCGCGC<br>GCGGATGGAGGAGATGGGCAGCCGGACCCGCGACCGCCTG<br>GA | 3460 |
| | TCCAGGCGGTCGCGGGTCCGGCTGCCCATCTCCTCCATCCG<br>CGCGCGCAGCCGCTCGCCC**C**AGGCCTGGGCCCGCTCCTGT<br>AGCGGCTGGCCGGCCAGGGAGCCCACAGTGGCGGCCCGCA | 3461 |
| | CCAGGCCT**G**GGGCGAGC | 3462 |
| | GCTCGCCC**C**AGGCCTGG | 3463 |
| Apolipoprotein E<br>Arg228Cys<br>cCGC-TGC | CAGGCCTGGGGCGAGCGGCTGCGCGCGCGGATGGAGGAGA<br>TGGGCAGCCGGACCCGCGAC**C**GCCTGGACGAGGTGAAGGA<br>GCAGGTGGCGGAGGTGCGCGCCAAGCTGGAGGAGCAGGCC<br>C | 3464 |
| | GGGCCTGCTCCTCCAGCTTGGCGCGCACCTCCGCCACCTGC<br>TCCTTCACCTCGTCCAGGC**G**GTCGCGGGTCCGGCTGCCCAT<br>CTCCTCCATCCGCGCGCGCAGCCGCTCGCCCCAGGCCTG | 3465 |
| | CCCGCGAC**C**GCCTGGAC | 3466 |
| | GTCCAGGC**G**GTCGCGGG | 3467 |
| Apolipoprotein E<br>Glu244Lys<br>gGAG-AAG | CGGACCCGCGACCGCCTGGACGAGGTGAAGGAGCAGGTGG<br>CGGAGGTGCGCGCCAAGCTG**G**AGGAGCAGGCCCAGCAGAT<br>ACGCCTGCAGGCCGAGGCCTTCCAGGCCCGCCTCAAGAGCT | 3468 |
| | AGCTCTTGAGGCGGGCCTGGAAGGCCTCGGCCTGCAGGCGT<br>ATCTGCTGGGCCTGCTCCT**C**CAGCTTGGCGCGCACCTCCGC<br>CACCTGCTCCTTCACCTCGTCCAGGCGGTCGCGGGTCCG | 3469 |
| | CCAAGCTG**G**AGGAGCAG | 3470 |
| | CTGCTCCT**C**CAGCTTGG | 3471 |

## EXAMPLE 21
## Familial hypercholesterolemia - LDLR

Familial hypercholesterolemia is characterized by elevation of serum cholesterol bound to low density lipoprotein (LDL) and is, hence, one of the conditions producing a hyperlipoproteinemia phenotype. Familial hypercholesterolemia is an autosomal dominant disorder characterized by elevation

of serum cholesterol bound to low density lipoprotein (LDL). Mutations in the LDL receptor (LDLR) gene cause this disorder. The attached table discloses the correcting oligonucleotide base sequences for the LDLR oligonucleotides of the invention.

**Table 28**
**LDLR Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Hypercholesterolaemia Glu10Term cGAG-TAG | GCGTTGAGAGACCCTTTCTCCTTTTCCTCTCTCTCAGTGGGC GACAGATGCGAAAGAAACGAGTTCCAGTGCCAAGACGGGAA ATGCATCTCCTACAAGTGGGTCTGCGATGGCAGCGCTG | 3472 |
| | CAGCGCTGCCATCGCAGACCCACTTGTAGGAGATGCATTTCC CGTCTTGGCACTGGAACTCGTTTCTTTCGCATCTGTCGCCCA CTGAGAGAGAGGAAAAGGAGAAAGGGTCTCTCAACGC | 3473 |
| | AAAGAAACGAGTTCCAG | 3474 |
| | CTGGAACTCGTTTCTTT | 3475 |
| Hypercholesterolaemia Gln12Term cCAG-TAG | AGAGACCCTTTCTCCTTTTCCTCTCTCTCAGTGGGCGACAGA TGCGAAAGAAACGAGTTCCAGTGCCAAGACGGGAAATGCATC TCCTACAAGTGGGTCTGCGATGGCAGCGCTGAGTGCC | 3476 |
| | GGCACTCAGCGCTGCCATCGCAGACCCACTTGTAGGAGATG CATTTCCCGTCTTGGCACTGGAACTCGTTTCTTTCGCATCTGT CGCCCACTGAGAGAGAGGAAAAGGAGAAAGGGTCTCT | 3477 |
| | ACGAGTTCCAGTGCCAA | 3478 |
| | TTGGCACTGGAACTCGT | 3479 |
| Hypercholesterolaemia Gln14Term cCAA-TAA | CCTTTCTCCTTTTCCTCTCTCTCAGTGGGCGACAGATGCGAA AGAAACGAGTTCCAGTGCCAAGACGGGAAATGCATCTCCTAC AAGTGGGTCTGCGATGGCAGCGCTGAGTGCCAGGATG | 3480 |
| | CATCCTGGCACTCAGCGCTGCCATCGCAGACCCACTTGTAG GAGATGCATTTCCCGTCTTGGCACTGGAACTCGTTTCTTTCG CATCTGTCGCCCACTGAGAGAGAGGAAAAGGAGAAAGG | 3481 |
| | TCCAGTGCCAAGACGGG | 3482 |
| | CCCGTCTTGGCACTGGA | 3483 |
| Hypercholesterolaemia Trp23Term TGG-TAG | GCGACAGATGCGAAAGAAACGAGTTCCAGTGCCAAGACGGG AAATGCATCTCCTACAAGTGGGTCTGCGATGGCAGCGCTGAG TGCCAGGATGGCTCTGATGAGTCCCAGGAGACGTGCTG | 3484 |
| | CAGCACGTCTCCTGGGACTCATCAGAGCCATCCTGGCACTCA GCGCTGCCATCGCAGACCCACTTGTAGGAGATGCATTTCCCG TCTTGGCACTGGAACTCGTTTCTTTCGCATCTGTCGC | 3485 |
| | CTACAAGTGGGTCTGCG | 3486 |
| | CGCAGACCCACTTGTAG | 3487 |
| Hypercholesterolaemia Ala29Ser cGCT-TCT | AACGAGTTCCAGTGCCAAGACGGGAAATGCATCTCCTACAAG TGGGTCTGCGATGGCAGCGCTGAGTGCCAGGATGGCTCTGA TGAGTCCCAGGAGACGTGCTGTGAGTCCCCTTTGGGCA | 3488 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGCCCAAAGGGGACTCACAGCACGTCTCCTGGGACTCATCA<br>GAGCCATCCTGGCACTCAG**C**GCTGCCATCGCAGACCCACTT<br>GTAGGAGATGCATTTCCCGTCTTGGCACTGGAACTCGTT | 3489 |
| | ATGGCAGC**G**CTGAGTGC | 3490 |
| | GCACTCAG**C**GCTGCCAT | 3491 |
| Hypercholesterolaemia<br>Cys31Tyr<br>TGC-TAC | TCCAGTGCCAAGACGGGAAATGCATCTCCTACAAGTGGGTCT<br>GCGATGGCAGCGCTGAGT**G**CCAGGATGGCTCTGATGAGTCC<br>CAGGAGACGTGCTGTGAGTCCCCTTTGGGCATGATATG | 3492 |
| | CATATCATGCCCAAAGGGGACTCACAGCACGTCTCCTGGGAC<br>TCATCAGAGCCATCCTGG**C**ACTCAGCGCTGCCATCGCAGAC<br>CCACTTGTAGGAGATGCATTTCCCGTCTTGGCACTGGA | 3493 |
| | CGCTGAGT**G**CCAGGATG | 3494 |
| | CATCCTGG**C**ACTCAGCG | 3495 |
| Hypercholesterolaemia<br>Arg57Cys<br>cCGT-TGT | AATCCTGTCTCTTCTGTAGTGTCTGTCACCTGCAAATCCGGG<br>GACTTCAGCTGTGGGGGC**C**GTGTCAACCGCTGCATTCCTCA<br>GTTCTGGAGGTGCGATGGCCAAGTGGACTGCGACAACG | 3496 |
| | CGTTGTCGCAGTCCACTTGGCCATCGCACCTCCAGAACTGAG<br>GAATGCAGCGGTTGACAC**G**GCCCCCACAGCTGAAGTCCCCG<br>GATTTGCAGGTGACAGACACTACAGAAGAGACAGGATT | 3497 |
| | GTGGGGGC**C**GTGTCAAC | 3498 |
| | GTTGACAC**G**GCCCCCAC | 3499 |
| Hypercholesterolaemia<br>Gln64Term<br>tCAG-TAG | TCTGTCACCTGCAAATCCGGGGACTTCAGCTGTGGGGGCCG<br>TGTCAACCGCTGCATTCCT**C**AGTTCTGGAGGTGCGATGGCCA<br>AGTGGACTGCGACAACGGCTCAGACGAGCAAGGCTGTC | 3500 |
| | GACAGCCTTGCTCGTCTGAGCCGTTGTCGCAGTCCACTTGGC<br>CATCGCACCTCCAGAACT**G**AGGAATGCAGCGGTTGACACGG<br>CCCCCACAGCTGAAGTCCCCGGATTTGCAGGTGACAGA | 3501 |
| | GCATTCCT**C**AGTTCTGG | 3502 |
| | CCAGAACT**G**AGGAATGC | 3503 |
| Hypercholesterolaemia<br>Trp66Gly<br>cTGG-GGG | ACCTGCAAATCCGGGGACTTCAGCTGTGGGGGCCGTGTCAA<br>CCGCTGCATTCCTCAGTTC**T**GGAGGTGCGATGGCCAAGTGG<br>ACTGCGACAACGGCTCAGACGAGCAAGGCTGTCGTAAGT | 3504 |
| | ACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTCGCAGTCCA<br>CTTGGCCATCGCACCTCC**A**GAACTGAGGAATGCAGCGGTTG<br>ACACGGCCCCCACAGCTGAAGTCCCCGGATTTGCAGGT | 3505 |
| | CTCAGTTC**T**GGAGGTGC | 3506 |
| | GCACCTCC**A**GAACTGAG | 3507 |
| Hypercholesterolaemia<br>Trp66Term<br>TGG-TAG | CCTGCAAATCCGGGGACTTCAGCTGTGGGGGCCGTGTCAAC<br>CGCTGCATTCCTCAGTTCT**G**GAGGTGCGATGGCCAAGTGGA<br>CTGCGACAACGGCTCAGACGAGCAAGGCTGTCGTAAGTG | 3508 |
| | CACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTCGCAGTCC<br>ACTTGGCCATCGCACCTC**C**AGAACTGAGGAATGCAGCGGTTG<br>ACACGGCCCCCACAGCTGAAGTCCCCGGATTTGCAGG | 3509 |
| | TCAGTTCT**G**GAGGTGCG | 3510 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CGCACCTC**C**AGAACTGA | 3511 |
| Hypercholesterolaemia Cys68Arg gTGC-CGC | AAATCCGGGGACTTCAGCTGTGGGGGCCGTGTCAACCGCTG CATTCCTCAGTTCTGGAGG**T**GCGATGGCCAAGTGGACTGCGA CAACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCC | 3512 |
| | GGCCACACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTCGC AGTCCACTTGGCCATCGC**A**CCTCCAGAACTGAGGAATGCAG CGGTTGACACGGCCCCCACAGCTGAAGTCCCCGGATTT | 3513 |
| | TCTGGAGG**T**GCGATGGC | 3514 |
| | GCCATCGC**A**CCTCCAGA | 3515 |
| Hypercholesterolaemia Cys68Trp TGCg-TGG | ATCCGGGGACTTCAGCTGTGGGGGCCGTGTCAACCGCTGCA TTCCTCAGTTCTGGAGGTG**C**GATGGCCAAGTGGACTGCGACA ACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCCCT | 3516 |
| | AGGGCCACACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTC GCAGTCCACTTGGCCATC**G**CACCTCCAGAACTGAGGAATGCA GCGGTTGACACGGCCCCCACAGCTGAAGTCCCCGGAT | 3517 |
| | TGGAGGTG**C**GATGGCCA | 3518 |
| | TGGCCATC**G**CACCTCCA | 3519 |
| Hypercholesterolaemia Cys68Tyr TGC-TAC | AATCCGGGGACTTCAGCTGTGGGGGCCGTGTCAACCGCTGC ATTCCTCAGTTCTGGAGGT**G**CGATGGCCAAGTGGACTGCGAC AACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCCC | 3520 |
| | GGGCCACACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTC GCAGTCCACTTGGCCATCG**C**ACCTCCAGAACTGAGGAATGCA GCGGTTGACACGGCCCCCACAGCTGAAGTCCCCGGATT | 3521 |
| | CTGGAGGT**G**CGATGGCC | 3522 |
| | GGCCATCG**C**ACCTCCAG | 3523 |
| Hypercholesterolaemia Asp69Asn cGAT-AAT | TCCGGGGACTTCAGCTGTGGGGGCCGTGTCAACCGCTGCAT TCCTCAGTTCTGGAGGTGC**G**ATGGCCAAGTGGACTGCGACA ACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCCCTG | 3524 |
| | CAGGGCCACACTTACGACAGCCTTGCTCGTCTGAGCCGTTGT CGCAGTCCACTTGGCCAT**C**GCACCTCCAGAACTGAGGAATG CAGCGGTTGACACGGCCCCCACAGCTGAAGTCCCCGGA | 3525 |
| | GGAGGTGC**G**ATGGCCAA | 3526 |
| | TTGGCCAT**C**GCACCTCC | 3527 |
| Hypercholesterolaemia Asp69Gly GAT-GGT | CCGGGGACTTCAGCTGTGGGGGCCGTGTCAACCGCTGCATT CCTCAGTTCTGGAGGTGCG**A**TGGCCAAGTGGACTGCGACAA CGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCCCTGC | 3528 |
| | GCAGGGCCACACTTACGACAGCCTTGCTCGTCTGAGCCGTT GTCGCAGTCCACTTGGCCA**T**CGCACCTCCAGAACTGAGGAAT GCAGCGGTTGACACGGCCCCCACAGCTGAAGTCCCCGG | 3529 |
| | GAGGTGCG**A**TGGCCAAG | 3530 |
| | CTTGGCCA**T**CGCACCTC | 3531 |
| Hypercholesterolaemia Asp69Tyr cGAT-TAT | TCCGGGGACTTCAGCTGTGGGGGCCGTGTCAACCGCTGCAT TCCTCAGTTCTGGAGGTGC**G**ATGGCCAAGTGGACTGCGACA ACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCCCTG | 3532 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CAGGGCCACACTTACGACAGCCTTGCTCGTCTGAGCCGTTGT<br>CGCAGTCCACTTGGCCATCGCACCTCCAGAACTGAGGAATG<br>CAGCGGTTGACACGGCCCCCACAGCTGAAGTCCCCGGA | 3533 |
| | GGAGGTGCGATGGCCAA | 3534 |
| | TTGGCCATCGCACCTCC | 3535 |
| Hypercholesterolaemia<br>Gln71Glu<br>cCAA-GAA | GACTTCAGCTGTGGGGGCCGTGTCAACCGCTGCATTCCTCA<br>GTTCTGGAGGTGCGATGGCCAAGTGGACTGCGACAACGGCT<br>CAGACGAGCAAGGCTGTCGTAAGTGTGGCCCTGCCTTTG | 3536 |
| | CAAAGGCAGGGCCACACTTACGACAGCCTTGCTCGTCTGAG<br>CCGTTGTCGCAGTCCACTTGGCCATCGCACCTCCAGAACTGA<br>GGAATGCAGCGGTTGACACGGCCCCCACAGCTGAAGTC | 3537 |
| | GCGATGGCCAAGTGGAC | 3538 |
| | GTCCACTTGGCCATCGC | 3539 |
| Hypercholesterolaemia<br>Cys74Gly<br>cTGC-GGC | TGTGGGGGCCGTGTCAACCGCTGCATTCCTCAGTTCTGGAG<br>GTGCGATGGCCAAGTGGACTGCGACAACGGCTCAGACGAGC<br>AAGGCTGTCGTAAGTGTGGCCCTGCCTTTGCTATTGAGC | 3540 |
| | GCTCAATAGCAAAGGCAGGGCCACACTTACGACAGCCTTGCT<br>CGTCTGAGCCGTTGTCGCAGTCCACTTGGCCATCGCACCTC<br>CAGAACTGAGGAATGCAGCGGTTGACACGGCCCCCACA | 3541 |
| | AAGTGGACTGCGACAAC | 3542 |
| | GTTGTCGCAGTCCACTT | 3543 |
| Hypercholesterolaemia<br>Ser78Term<br>TCA-TGA | TCAACCGCTGCATTCCTCAGTTCTGGAGGTGCGATGGCCAAG<br>TGGACTGCGACAACGGCTCAGACGAGCAAGGCTGTCGTAAG<br>TGTGGCCCTGCCTTTGCTATTGAGCCTATCTGAGTCCT | 3544 |
| | AGGACTCAGATAGGCTCAATAGCAAAGGCAGGGCCACACTTA<br>CGACAGCCTTGCTCGTCTGAGCCGTTGTCGCAGTCCACTTGG<br>CCATCGCACCTCCAGAACTGAGGAATGCAGCGGTTGA | 3545 |
| | CAACGGCTCAGACGAGC | 3546 |
| | GCTCGTCTGAGCCGTTG | 3547 |
| Hypercholesterolaemia<br>Glu80Lys<br>cGAG-AAG | CGCTGCATTCCTCAGTTCTGGAGGTGCGATGGCCAAGTGGA<br>CTGCGACAACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTG<br>GCCCTGCCTTTGCTATTGAGCCTATCTGAGTCCTGGGGA | 3548 |
| | TCCCCAGGACTCAGATAGGCTCAATAGCAAAGGCAGGGCCA<br>CACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTCGCAGTCC<br>ACTTGGCCATCGCACCTCCAGAACTGAGGAATGCAGCG | 3549 |
| | GCTCAGACGAGCAAGGC | 3550 |
| | GCCTTGCTCGTCTGAGC | 3551 |
| Hypercholesterolaemia<br>Glu80Term<br>cGAG-TAG | CGCTGCATTCCTCAGTTCTGGAGGTGCGATGGCCAAGTGGA<br>CTGCGACAACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTG<br>GCCCTGCCTTTGCTATTGAGCCTATCTGAGTCCTGGGGA | 3552 |
| | TCCCCAGGACTCAGATAGGCTCAATAGCAAAGGCAGGGCCA<br>ACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTCGCAGTCC<br>ACTTGGCCATCGCACCTCCAGAACTGAGGAATGCAGCG | 3553 |
| | GCTCAGACGAGCAAGGC | 3554 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GCCTTGCTCGTCTGAGC | 3555 |
| Hypercholesterolaemia Gln81Term gCAA-TAA | TGCATTCCTCAGTTCTGGAGGTGCGATGGCCAAGTGGACTGC GACAACGGCTCAGACGAGCAAGGCTGTCGTAAGTGTGGCCC TGCCTTTGCTATTGAGCCTATCTGAGTCCTGGGGAGTG | 3556 |
| | CACTCCCCAGGACTCAGATAGGCTCAATAGCAAAGGCAGGG CCACACTTACGACAGCCTTGCTCGTCTGAGCCGTTGTCGCAG TCCACTTGGCCATCGCACCTCCAGAACTGAGGAATGCA | 3557 |
| | CAGACGAGCAAGGCTGT | 3558 |
| | ACAGCCTTGCTCGTCTG | 3559 |
| Hypercholesterolaemia Cys88Arg gTGC-CGC | TGGGAGACTTCACACGGTGATGGTGGTCTCGGCCCATCCAT CCCTGCAGCCCCCAAGACGTGCTCCCAGGACGAGTTTCGCT GCCACGATGGGAAGTGCATCTCTCGGCAGTTCGTCTGTG | 3560 |
| | CACAGACGAACTGCCGAGAGATGCACTTCCCATCGTGGCAG CGAAACTCGTCCTGGGAGCACGTCTTGGGGGCTGCAGGGAT GGATGGGCCGAGACCACCATCACCGTGTGAAGTCTCCCA | 3561 |
| | CCAAGACGTGCTCCCAG | 3562 |
| | CTGGGAGCACGTCTTGG | 3563 |
| Hypercholesterolaemia Glu92Term cGAG-TAG | CACGGTGATGGTGGTCTCGGCCCATCCATCCCTGCAGCCCC CAAGACGTGCTCCCAGGACGAGTTTCGCTGCCACGATGGGA AGTGCATCTCTCGGCAGTTCGTCTGTGACTCAGACCGGG | 3564 |
| | CCCGGTCTGAGTCACAGACGAACTGCCGAGAGATGCACTTC CCATCGTGGCAGCGAAACTCGTCCTGGGAGCACGTCTTGGG GGCTGCAGGGATGGATGGGCCGAGACCACCATCACCGTG | 3565 |
| | CCCAGGACGAGTTTCGC | 3566 |
| | GCGAAACTCGTCCTGGG | 3567 |
| Hypercholesterolaemia Cys95Arg cTGC-CGC | GGTGGTCTCGGCCCATCCATCCCTGCAGCCCCCAAGACGTG CTCCCAGGACGAGTTTCGCTGCCACGATGGGAAGTGCATCT CTCGGCAGTTCGTCTGTGACTCAGACCGGGACTGCTTGG | 3568 |
| | CCAAGCAGTCCCGGTCTGAGTCACAGACGAACTGCCGAGAG ATGCACTTCCCATCGTGGCAGCGAAACTCGTCCTGGGAGCA CGTCTTGGGGGCTGCAGGGATGGATGGGCCGAGACCACC | 3569 |
| | AGTTTCGCTGCCACGAT | 3570 |
| | ATCGTGGCAGCGAAACT | 3571 |
| Hypercholesterolaemia Asp97Tyr cGAT-TAT | CTCGGCCCATCCATCCCTGCAGCCCCCAAGACGTGCTCCCA GGACGAGTTTCGCTGCCACGATGGGAAGTGCATCTCTCGGC AGTTCGTCTGTGACTCAGACCGGGACTGCTTGGACGGCT | 3572 |
| | AGCCGTCCAAGCAGTCCCGGTCTGAGTCACAGACGAACTGC CGAGAGATGCACTTCCCATCGTGGCAGCGAAACTCGTCCTG GGAGCACGTCTTGGGGGCTGCAGGGATGGATGGGCCGAG | 3573 |
| | GCTGCCACGATGGGAAG | 3574 |
| | CTTCCCATCGTGGCAGC | 3575 |
| Hypercholesterolaemia Trp(-12)Arg cTGG-AGG | GGGTCGGGACACTGCCTGGCAGAGGCTGCGAGCATGGGGC CCTGGGGCTGGAAATTGCGCTGGACCGTCGCCTTGCTCCTC GCCGCGGCGGGGACTGCAGGTAAGGCTTGCTCCAGGCGCC | 3576 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GGCGCCTGGAGCAAGCCTTACCTGCAGTCCCCGCCGCGGC<br>GAGGAGCAAGGCGACGGTCC**A**GCGCAATTTCCAGCCCCAGG<br>GCCCCATGCTCGCAGCCTCTGCCAGGCAGTGTCCCGACCC | 3577 |
| | AATTGCGC**T**GGACCGTC | 3578 |
| | GACGGTCC**A**GCGCAATT | 3579 |
| Hypercholesterolaemia<br>Trp(-18)Term<br>TGGg-TGA | CAGCAGGTCGTGATCCGGGTCGGGACACTGCCTGGCAGAGG<br>CTGCGAGCATGGGGCCCTG**G**GGCTGGAAATTGCGCTGGACC<br>GTCGCCTTGCTCCTCGCCGCGGCGGGGACTGCAGGTAAG | 3580 |
| | CTTACCTGCAGTCCCCGCCGCGGCGAGGAGCAAGGCGACG<br>GTCCAGCGCAATTTCCAGCC**C**CAGGGCCCCATGCTCGCAGC<br>CTCTGCCAGGCAGTGTCCCGACCCGGATCACGACCTGCTG | 3581 |
| | GGGCCCTG**G**GGCTGGAA | 3582 |
| | TTCCAGCC**C**CAGGGCCC | 3583 |
| Hypercholesterolaemia<br>Met(-21)Leu<br>cATG-TTG | CAGCTAGGACACAGCAGGTCGTGATCCGGGTCGGGACACTG<br>CCTGGCAGAGGCTGCGAGC**A**TGGGGCCCTGGGGCTGGAAA<br>TTGCGCTGGACCGTCGCCTTGCTCCTCGCCGCGGCGGGGA | 3584 |
| | TCCCCGCCGCGGCGAGGAGCAAGGCGACGGTCCAGCGCAA<br>TTTCCAGCCCCAGGGCCCCA**T**GCTCGCAGCCTCTGCCAGGC<br>AGTGTCCCGACCCGGATCACGACCTGCTGTGTCCTAGCTG | 3585 |
| | CTGCGAGC**A**TGGGGCCC | 3586 |
| | GGGCCCCA**T**GCTCGCAG | 3587 |
| Hypercholesterolaemia<br>Met(-21)Val<br>cATG-GTG | CAGCTAGGACACAGCAGGTCGTGATCCGGGTCGGGACACTG<br>CCTGGCAGAGGCTGCGAGC**A**TGGGGCCCTGGGGCTGGAAA<br>TTGCGCTGGACCGTCGCCTTGCTCCTCGCCGCGGCGGGGA | 3588 |
| | TCCCCGCCGCGGCGAGGAGCAAGGCGACGGTCCAGCGCAA<br>TTTCCAGCCCCAGGGCCCCA**T**GCTCGCAGCCTCTGCCAGGC<br>AGTGTCCCGACCCGGATCACGACCTGCTGTGTCCTAGCTG | 3589 |
| | CTGCGAGC**A**TGGGGCCC | 3590 |
| | GGGCCCCA**T**GCTCGCAG | 3591 |
| Hypercholesterolaemia<br>Ile101Phe<br>cATC-TTC | ATCCCTGCAGCCCCCAAGACGTGCTCCCAGGACGAGTTTCG<br>CTGCCACGATGGGAAGTGC**A**TCTCTCGGCAGTTCGTCTGTGA<br>CTCAGACCGGGACTGCTTGGACGGCTCAGACGAGGCCT | 3592 |
| | AGGCCTCGTCTGAGCCGTCCAAGCAGTCCCGGTCTGAGTCA<br>CAGACGAACTGCCGAGAGA**T**GCACTTCCCATCGTGGCAGCG<br>AAACTCGTCCTGGGAGCACGTCTTGGGGGCTGCAGGGAT | 3593 |
| | GGAAGTGC**A**TCTCTCGG | 3594 |
| | CCGAGAGA**T**GCACTTCC | 3595 |
| Hypercholesterolaemia<br>Gln104Term<br>gCAG-TAG | GCCCCCAAGACGTGCTCCCAGGACGAGTTTCGCTGCCACGA<br>TGGGAAGTGCATCTCTCGG**C**AGTTCGTCTGTGACTCAGACCG<br>GGACTGCTTGGACGGCTCAGACGAGGCCTCCTGCCCGG | 3596 |
| | CCGGGCAGGAGGCCTCGTCTGAGCCGTCCAAGCAGTCCCG<br>GTCTGAGTCACAGACGAACT**G**CCGAGAGATGCACTTCCCATC<br>GTGGCAGCGAAACTCGTCCTGGGAGCACGTCTTGGGGGC | 3597 |
| | TCTCTCGG**C**AGTTCGTC | 3598 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GACGAACTGCCGAGAGA | 3599 |
| Hypercholesterolaemia Cys113Arg cTGC-CGC | TTTCGCTGCCACGATGGGAAGTGCATCTCTCGGCAGTTCGTC TGTGACTCAGACCGGGACTGCTTGGACGGCTCAGACGAGGC CTCCTGCCCGGTGCTCACCTGTGGTCCCGCCAGCTTCC | 3600 |
| | GGAAGCTGGCGGGACCACAGGTGAGCACCGGGCAGGAGGC CTCGTCTGAGCCGTCCAAGCAGTCCCGGTCTGAGTCACAGA CGAACTGCCGAGAGATGCACTTCCCATCGTGGCAGCGAAA | 3601 |
| | ACCGGGACTGCTTGGAC | 3602 |
| | GTCCAAGCAGTCCCGGT | 3603 |
| Hypercholesterolaemia Glu119Lys cGAG-AAG | AAGTGCATCTCTCGGCAGTTCGTCTGTGACTCAGACCGGGAC TGCTTGGACGGCTCAGACGAGGCCTCCTGCCCGGTGCTCAC CTGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCT | 3604 |
| | AGGTGGAGCTGTTGCACTGGAAGCTGGCGGGACCACAGGTG AGCACCGGGCAGGAGGCCTCGTCTGAGCCGTCCAAGCAGTC CCGGTCTGAGTCACAGACGAACTGCCGAGAGATGCACTT | 3605 |
| | GCTCAGACGAGGCCTCC | 3606 |
| | GGAGGCCTCGTCTGAGC | 3607 |
| Hypercholesterolaemia Glu119Term cGAG-TAG | AAGTGCATCTCTCGGCAGTTCGTCTGTGACTCAGACCGGGAC TGCTTGGACGGCTCAGACGAGGCCTCCTGCCCGGTGCTCAC CTGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCT | 3608 |
| | AGGTGGAGCTGTTGCACTGGAAGCTGGCGGGACCACAGGTG AGCACCGGGCAGGAGGCCTCGTCTGAGCCGTCCAAGCAGTC CCGGTCTGAGTCACAGACGAACTGCCGAGAGATGCACTT | 3609 |
| | GCTCAGACGAGGCCTCC | 3610 |
| | GGAGGCCTCGTCTGAGC | 3611 |
| Hypercholesterolaemia Cys122Term TGCc-TGA | TCGGCAGTTCGTCTGTGACTCAGACCGGGACTGCTTGGACG GCTCAGACGAGGCCTCCTGCCCGGTGCTCACCTGTGGTCCC GCCAGCTTCCAGTGCAACAGCTCCACCTGCATCCCCCAG | 3612 |
| | CTGGGGGATGCAGGTGGAGCTGTTGCACTGGAAGCTGGCGG GACCACAGGTGAGCACCGGGCAGGAGGCCTCGTCTGAGCC GTCCAAGCAGTCCCGGTCTGAGTCACAGACGAACTGCCGA | 3613 |
| | GCCTCCTGCCCGGTGCT | 3614 |
| | AGCACCGGGCAGGAGGC | 3615 |
| Hypercholesterolaemia Cys127Trp TGTg-TGG | TGACTCAGACCGGGACTGCTTGGACGGCTCAGACGAGGCCT CCTGCCCGGTGCTCACCTGTGGTCCCGCCAGCTTCCAGTGC AACAGCTCCACCTGCATCCCCCAGCTGTGGGCCTGCGAC | 3616 |
| | GTCGCAGGCCCACAGCTGGGGGATGCAGGTGGAGCTGTTGC ACTGGAAGCTGGCGGGACCACAGGTGAGCACCGGGCAGGA GGCCTCGTCTGAGCCGTCCAAGCAGTCCCGGTCTGAGTCA | 3617 |
| | CTCACCTGTGGTCCCGC | 3618 |
| | GCGGGACCACAGGTGAG | 3619 |
| Hypercholesterolaemia Gln133Term cCAG-TAG | TGCTTGGACGGCTCAGACGAGGCCTCCTGCCCGGTGCTCAC CTGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCTGCAT CCCCCAGCTGTGGGCCTGCGACAACGACCCCGACTGCG | 3620 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CGCAGTCGGGGTCGTTGTCGCAGGCCCACAGCTGGGGGAT<br>GCAGGTGGAGCTGTTGCACT**G**GAAGCTGGCGGGACCACAGG<br>TGAGCACCGGGCAGGAGGCCTCGTCTGAGCCGTCCAAGCA | 3621 |
| | CCAGCTTC**C**AGTGCAAC | 3622 |
| | GTTGCACT**G**GAAGCTGG | 3623 |
| Hypercholesterolaemia<br>Cys134Gly<br>gTGC-GGC | TTGGACGGCTCAGACGAGGCCTCCTGCCCGGTGCTCACCTG<br>TGGTCCCGCCAGCTTCCAG**T**GCAACAGCTCCACCTGCATCC<br>CCCAGCTGTGGGCCTGCGACAACGACCCCGACTGCGAAG | 3624 |
| | CTTCGCAGTCGGGGTCGTTGTCGCAGGCCCACAGCTGGGGG<br>ATGCAGGTGGAGCTGTTGC**A**CTGGAAGCTGGCGGGACCACA<br>GGTGAGCACCGGGCAGGAGGCCTCGTCTGAGCCGTCCAA | 3625 |
| | GCTTCCAG**T**GCAACAGC | 3626 |
| | GCTGTTGC**A**CTGGAAGC | 3627 |
| Hypercholesterolaemia<br>Cys139Gly<br>cTGC-GGC | GAGGCCTCCTGCCCGGTGCTCACCTGTGGTCCCGCCAGCTT<br>CCAGTGCAACAGCTCCACC**T**GCATCCCCCAGCTGTGGGCCT<br>GCGACAACGACCCCGACTGCGAAGATGGCTCGGATGAGT | 3628 |
| | ACTCATCCGAGCCATCTTCGCAGTCGGGGTCGTTGTCGCAG<br>GCCCACAGCTGGGGGATGC**A**GGTGGAGCTGTTGCACTGGAA<br>GCTGGCGGGACCACAGGTGAGCACCGGGCAGGAGGCCTC | 3629 |
| | GCTCCACC**T**GCATCCCC | 3630 |
| | GGGGATGC**A**GGTGGAGC | 3631 |
| Hypercholesterolaemia<br>Cys139Tyr<br>TGC-TAC | AGGCCTCCTGCCCGGTGCTCACCTGTGGTCCCGCCAGCTTC<br>CAGTGCAACAGCTCCACCT**G**CATCCCCCAGCTGTGGGCCTG<br>CGACAACGACCCCGACTGCGAAGATGGCTCGGATGAGTG | 3632 |
| | CACTCATCCGAGCCATCTTCGCAGTCGGGGTCGTTGTCGCA<br>GGCCCACAGCTGGGGGATG**C**AGGTGGAGCTGTTGCACTGGA<br>AGCTGGCGGGACCACAGGTGAGCACCGGGCAGGAGGCCT | 3633 |
| | CTCCACCT**G**CATCCCCC | 3634 |
| | GGGGGATG**C**AGGTGGAG | 3635 |
| Hypercholesterolaemia<br>Cys146Term<br>TGCg-TGA | CTGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCTGCAT<br>CCCCCAGCTGTGGGCCTG**C**GACAACGACCCCGACTGCGAAG<br>ATGGCTCGGATGAGTGGCCGCAGCGCTGTAGGGGTCTT | 3636 |
| | AAGACCCCTACAGCGCTGCGGCCACTCATCCGAGCCATCTTC<br>GCAGTCGGGGTCGTTGTC**G**CAGGCCCACAGCTGGGGGATG<br>CAGGTGGAGCTGTTGCACTGGAAGCTGGCGGGACCACAG | 3637 |
| | TGGGCCTG**C**GACAACGA | 3638 |
| | TCGTTGTC**G**CAGGCCCA | 3639 |
| Hypercholesterolaemia<br>Asp147Asn<br>cGAC-AAC | TGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCTGCATC<br>CCCCAGCTGTGGGCCTGC**G**ACAACGACCCCGACTGCGAAGA<br>TGGCTCGGATGAGTGGCCGCAGCGCTGTAGGGGTCTTT | 3640 |
| | AAAGACCCCTACAGCGCTGCGGCCACTCATCCGAGCCATCTT<br>CGCAGTCGGGGTCGTTGT**C**GCAGGCCCACAGCTGGGGGAT<br>GCAGGTGGAGCTGTTGCACTGGAAGCTGGCGGGACCACA | 3641 |
| | GGGCCTGC**G**ACAACGAC | 3642 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GTCGTTGTCGCAGGCCC | 3643 |
| Hypercholesterolaemia Asp147His cGAC-CAC | TGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCTGCATC CCCCAGCTGTGGGCCTGCGACAACGACCCCGACTGCGAAGA TGGCTCGGATGAGTGGCCGCAGCGCTGTAGGGGTCTTT | 3644 |
| | AAAGACCCCTACAGCGCTGCGGCCACTCATCCGAGCCATCTT CGCAGTCGGGGTCGTTGTCGCAGGCCCACAGCTGGGGGAT GCAGGTGGAGCTGTTGCACTGGAAGCTGGCGGGACCACA | 3645 |
| | GGGCCTGCGACAACGAC | 3646 |
| | GTCGTTGTCGCAGGCCC | 3647 |
| Hypercholesterolaemia Asp147Tyr cGAC-TAC | TGTGGTCCCGCCAGCTTCCAGTGCAACAGCTCCACCTGCATC CCCCAGCTGTGGGCCTGCGACAACGACCCCGACTGCGAAGA TGGCTCGGATGAGTGGCCGCAGCGCTGTAGGGGTCTTT | 3648 |
| | AAAGACCCCTACAGCGCTGCGGCCACTCATCCGAGCCATCTT CGCAGTCGGGGTCGTTGTCGCAGGCCCACAGCTGGGGGAT GCAGGTGGAGCTGTTGCACTGGAAGCTGGCGGGACCACA | 3649 |
| | GGGCCTGCGACAACGAC | 3650 |
| | GTCGTTGTCGCAGGCCC | 3651 |
| Hypercholesterolaemia Cys152Arg cTGC-CGC | TTCCAGTGCAACAGCTCCACCTGCATCCCCCAGCTGTGGGC CTGCGACAACGACCCCGACTTGCGAAGATGGCTCGGATGAGT GGCCGCAGCGCTGTAGGGGTCTTTACGTGTTCCAAGGGG | 3652 |
| | CCCCTTGGAACACGTAAAGACCCCTACAGCGCTGCGGCCAC TCATCCGAGCCATCTTCGCAGTCGGGGTCGTTGTCGCAGGC CCACAGCTGGGGGATGCAGGTGGAGCTGTTGCACTGGAA | 3653 |
| | ACCCCGACTTGCGAAGAT | 3654 |
| | ATCTTCGCAGTCGGGGT | 3655 |
| Hypercholesterolaemia Cys152Gly cTGC-GGC | TTCCAGTGCAACAGCTCCACCTGCATCCCCCAGCTGTGGGC CTGCGACAACGACCCCGACTTGCGAAGATGGCTCGGATGAGT GGCCGCAGCGCTGTAGGGGTCTTTACGTGTTCCAAGGGG | 3656 |
| | CCCCTTGGAACACGTAAAGACCCCTACAGCGCTGCGGCCAC TCATCCGAGCCATCTTCGCAGTCGGGGTCGTTGTCGCAGGC CCACAGCTGGGGGATGCAGGTGGAGCTGTTGCACTGGAA | 3657 |
| | ACCCCGACTTGCGAAGAT | 3658 |
| | ATCTTCGCAGTCGGGGT | 3659 |
| Hypercholesterolaemia Cys152Trp TGCg-TGG | CCAGTGCAACAGCTCCACCTGCATCCCCCAGCTGTGGGCCT GCGACAACGACCCCGACTGCGAAGATGGCTCGGATGAGTGG CCGCAGCGCTGTAGGGGTCTTTACGTGTTCCAAGGGGAC | 3660 |
| | GTCCCCTTGGAACACGTAAAGACCCCTACAGCGCTGCGGCC ACTCATCCGAGCCATCTTCGCAGTCGGGGTCGTTGTCGCAG GCCCACAGCTGGGGGATGCAGGTGGAGCTGTTGCACTGG | 3661 |
| | CCCGACTGCGAAGATGG | 3662 |
| | CCATCTTCGCAGTCGGG | 3663 |
| Hypercholesterolaemia Asp154Asn aGAT-AAT | TGCAACAGCTCCACCTGCATCCCCCAGCTGTGGGCCTGCGA CAACGACCCCGACTGCGAAGATGGCTCGGATGAGTGGCCGC AGCGCTGTAGGGGTCTTTACGTGTTCCAAGGGGACAGTA | 3664 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TACTGTCCCCTTGGAACACGTAAAGACCCCTACAGCGCTGCG<br>GCCACTCATCCGAGCCATCTTCGCAGTCGGGGTCGTTGTCG<br>CAGGCCCACAGCTGGGGGATGCAGGTGGAGCTGTTGCA | 3665 |
| | ACTGCGAAGATGGCTCG | 3666 |
| | CGAGCCATCTTCGCAGT | 3667 |
| Hypercholesterolaemia<br>Ser156Leu<br>TCG-TTG | GCTCCACCTGCATCCCCCAGCTGTGGGCCTGCGACAACGAC<br>CCCGACTGCGAAGATGGCTCGGATGAGTGGCCGCAGCGCTG<br>TAGGGGTCTTTACGTGTTCCAAGGGGACAGTAGCCCCTG | 3668 |
| | CAGGGGCTACTGTCCCCTTGGAACACGTAAAGACCCCTACAG<br>CGCTGCGGCCACTCATCCGAGCCATCTTCGCAGTCGGGGTC<br>GTTGTCGCAGGCCCACAGCTGGGGGATGCAGGTGGAGC | 3669 |
| | AGATGGCTCGGATGAGT | 3670 |
| | ACTCATCCGAGCCATCT | 3671 |
| Hypercholesterolaemia<br>Cys163Tyr<br>TGT-TAT | TGTGGGCCTGCGACAACGACCCCGACTGCGAAGATGGCTCG<br>GATGAGTGGCCGCAGCGCTGTAGGGGTCTTTACGTGTTCCAA<br>GGGGACAGTAGCCCCTGCTCGGCCTTCGAGTTCCACTG | 3672 |
| | CAGTGGAACTCGAAGGCCGAGCAGGGGCTACTGTCCCCTTG<br>GAACACGTAAAGACCCCTACAGCGCTGCGGCCACTCATCCG<br>AGCCATCTTCGCAGTCGGGGTCGTTGTCGCAGGCCCACA | 3673 |
| | GCAGCGCTGTAGGGGTC | 3674 |
| | GACCCCTACAGCGCTGC | 3675 |
| Hypercholesterolaemia<br>Tyr167Term<br>TACg-TAG | CAACGACCCCGACTGCGAAGATGGCTCGGATGAGTGGCCGC<br>AGCGCTGTAGGGGTCTTTACGTGTTCCAAGGGGACAGTAGC<br>CCCTGCTCGGCCTTCGAGTTCCACTGCCTAAGTGGCGAG | 3676 |
| | CTCGCCACTTAGGCAGTGGAACTCGAAGGCCGAGCAGGGGC<br>TACTGTCCCCTTGGAACACGTAAAGACCCCTACAGCGCTGCG<br>GCCACTCATCCGAGCCATCTTCGCAGTCGGGGTCGTTG | 3677 |
| | GGTCTTTACGTGTTCCA | 3678 |
| | TGGAACACGTAAAGACC | 3679 |
| Hypercholesterolaemia<br>Gln170Term<br>cCAA-TAA | CCCGACTGCGAAGATGGCTCGGATGAGTGGCCGCAGCGCTG<br>TAGGGGTCTTTACGTGTTCCAAGGGGACAGTAGCCCCTGCTC<br>GGCCTTCGAGTTCCACTGCCTAAGTGGCGAGTGCATCC | 3680 |
| | GGATGCACTCGCCACTTAGGCAGTGGAACTCGAAGGCCGAG<br>CAGGGGCTACTGTCCCCTTGGAACACGTAAAGACCCCTACAG<br>CGCTGCGGCCACTCATCCGAGCCATCTTCGCAGTCGGG | 3681 |
| | ACGTGTTCCAAGGGGAC | 3682 |
| | GTCCCCTTGGAACACGT | 3683 |
| Hypercholesterolaemia<br>Cys176Phe<br>TGC-TTC | CGGATGAGTGGCCGCAGCGCTGTAGGGGTCTTTACGTGTTC<br>CAAGGGGACAGTAGCCCCTGCTCGGCCTTCGAGTTCCACTG<br>CCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGA | 3684 |
| | TCACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAGGCA<br>GTGGAACTCGAAGGCCGAGCAGGGGCTACTGTCCCCTTGGA<br>ACACGTAAAGACCCCTACAGCGCTGCGGCCACTCATCCG | 3685 |
| | TAGCCCCTGCTCGGCCT | 3686 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGGCCGAGCAGGGGCTA | 3687 |
| Hypercholesterolaemia Cys176Tyr TGC-TAC | CGGATGAGTGGCCGCAGCGCTGTAGGGGTCTTTACGTGTTC CAAGGGGACAGTAGCCCCTGCTCGGCCTTCGAGTTCCACTG CCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGA | 3688 |
| | TCACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAGGCA GTGGAACTCGAAGGCCGAGCAGGGGCTACTGTCCCCTTGGA ACACGTAAAGACCCCTACAGCGCTGCGGCCACTCATCCG | 3689 |
| | TAGCCCCTGCTCGGCCT | 3690 |
| | AGGCCGAGCAGGGGCTA | 3691 |
| Hypercholesterolaemia Ser177Leu TCG-TTG | ATGAGTGGCCGCAGCGCTGTAGGGGTCTTTACGTGTTCCAAG GGGACAGTAGCCCCTGCTCGGCCTTCGAGTTCCACTGCCTA AGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGATGG | 3692 |
| | CCATCACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAG GCAGTGGAACTCGAAGGCCGAGCAGGGGCTACTGTCCCCTT GGAACACGTAAAGACCCCTACAGCGCTGCGGCCACTCAT | 3693 |
| | CCCCTGCTCGGCCTTCG | 3694 |
| | CGAAGGCCGAGCAGGGG | 3695 |
| Hypercholesterolaemia Glu187Lys cGAG-AAG | TACGTGTTCCAAGGGGACAGTAGCCCCTGCTCGGCCTTCGA GTTCCACTGCCTAAGTGGCGAGTGCATCCACTCCAGCTGGC GCTGTGATGGTGGCCCCGACTGCAAGGACAAATCTGACG | 3696 |
| | CGTCAGATTTGTCCTTGCAGTCGGGGCCACCATCACAGCGC CAGCTGGAGTGGATGCACTCGCCACTTAGGCAGTGGAACTC GAAGGCCGAGCAGGGGCTACTGTCCCCTTGGAACACGTA | 3697 |
| | TAAGTGGCGAGTGCATC | 3698 |
| | GATGCACTCGCCACTTA | 3699 |
| Hypercholesterolaemia His190Tyr cCAC-TAC | CAAGGGGACAGTAGCCCCTGCTCGGCCTTCGAGTTCCACTG CCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGATG GTGGCCCCGACTGCAAGGACAAATCTGACGAGGAAAACT | 3700 |
| | AGTTTTCCTCGTCAGATTTGTCCTTGCAGTCGGGGCCACCAT CACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAGGCAG TGGAACTCGAAGGCCGAGCAGGGGCTACTGTCCCCTTG | 3701 |
| | AGTGCATCCACTCCAGC | 3702 |
| | GCTGGAGTGGATGCACT | 3703 |
| Hypercholesterolaemia Gly198Asp GGC-GAC | CCTTCGAGTTCCACTGCCTAAGTGGCGAGTGCATCCACTCCA GCTGGCGCTGTGATGGTGGCCCCGACTGCAAGGACAAATCT GACGAGGAAAACTGCGGTATGGGCGGGGCCAGGGTGGG | 3704 |
| | CCCACCCTGGCCCCGCCCATACCGCAGTTTTCCTCGTCAGAT TTGTCCTTGCAGTCGGGGCCACCATCACAGCGCCAGCTGGA GTGGATGCACTCGCCACTTAGGCAGTGGAACTCGAAGG | 3705 |
| | TGATGGTGGCCCCGACT | 3706 |
| | AGTCGGGGCCACCATCA | 3707 |
| Hypercholesterolaemia Asp200Asn cGAC-AAC | GAGTTCCACTGCCTAAGTGGCGAGTGCATCCACTCCAGCTG GCGCTGTGATGGTGGCCCCGACTGCAAGGACAAATCTGACG AGGAAAACTGCGGTATGGGCGGGGCCAGGGTGGGGGCGG | 3708 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCGCCCCCACCCTGGCCCCGCCCATACCGCAGTTTTCCTCG<br>TCAGATTTGTCCTTGCAGT**C**GGGGCCACCATCACAGCGCCAG<br>CTGGAGTGGATGCACTCGCCACTTAGGCAGTGGAACTC | 3709 |
| | GTGGCCCC**G**ACTGCAAG | 3710 |
| | CTTGCAGT**C**GGGGCCAC | 3711 |
| Hypercholesterolaemia<br>Asp200Gly<br>GAC-GGC | AGTTCCACTGCCTAAGTGGCGAGTGCATCCACTCCAGCTGGC<br>GCTGTGATGGTGGCCCCG**A**CTGCAAGGACAAATCTGACGAG<br>GAAAACTGCGGTATGGGCGGGGCCAGGGTGGGGGCGGG | 3712 |
| | CCCGCCCCCACCCTGGCCCCGCCCATACCGCAGTTTTCCTC<br>GTCAGATTTGTCCTTGCAG**T**CGGGGCCACCATCACAGCGCCA<br>GCTGGAGTGGATGCACTCGCCACTTAGGCAGTGGAACT | 3713 |
| | TGGCCCCG**A**CTGCAAGG | 3714 |
| | CCTTGCAG**T**CGGGGCCA | 3715 |
| Hypercholesterolaemia<br>Asp200Tyr<br>cGAC-TAC | GAGTTCCACTGCCTAAGTGGCGAGTGCATCCACTCCAGCTG<br>GCGCTGTGATGGTGGCCCC**G**ACTGCAAGGACAAATCTGACG<br>AGGAAAACTGCGGTATGGGCGGGGCCAGGGTGGGGGCGG | 3716 |
| | CCGCCCCCACCCTGGCCCCGCCCATACCGCAGTTTTCCTCG<br>TCAGATTTGTCCTTGCAGT**C**GGGGCCACCATCACAGCGCCAG<br>CTGGAGTGGATGCACTCGCCACTTAGGCAGTGGAACTC | 3717 |
| | GTGGCCCC**G**ACTGCAAG | 3718 |
| | CTTGCAGT**C**GGGGCCAC | 3719 |
| Hypercholesterolaemia<br>Cys201Term<br>TGCa-TGA | CCACTGCCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCT<br>GTGATGGTGGCCCCGACTG**C**AAGGACAAATCTGACGAGGAA<br>AACTGCGGTATGGGCGGGGCCAGGGTGGGGGCGGGGCGT | 3720 |
| | ACGCCCCGCCCCCACCCTGGCCCCGCCCATACCGCAGTTTT<br>CCTCGTCAGATTTGTCCTT**G**CAGTCGGGGCCACCATCACAGC<br>GCCAGCTGGAGTGGATGCACTCGCCACTTAGGCAGTGG | 3721 |
| | CCCGACTG**C**AAGGACAA | 3722 |
| | TTGTCCTT**G**CAGTCGGG | 3723 |
| Hypercholesterolaemia<br>Cys201Tyr<br>TGC-TAC | TCCACTGCCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGC<br>TGTGATGGTGGCCCCGACT**G**CAAGGACAAATCTGACGAGGA<br>AAACTGCGGTATGGGCGGGGCCAGGGTGGGGGCGGGGCG | 3724 |
| | CGCCCCGCCCCCACCCTGGCCCCGCCCATACCGCAGTTTTC<br>CTCGTCAGATTTGTCCTTG**C**AGTCGGGGCCACCATCACAGCG<br>CCAGCTGGAGTGGATGCACTCGCCACTTAGGCAGTGGA | 3725 |
| | CCCCGACT**G**CAAGGACA | 3726 |
| | TGTCCTTG**C**AGTCGGGG | 3727 |
| Hypercholesterolaemia<br>Asp203Asn<br>gGAC-AAC | TGCCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGA<br>TGGTGGCCCCGACTGCAAG**G**ACAAATCTGACGAGGAAAACT<br>GCGGTATGGGCGGGGCCAGGGTGGGGGCGGGGCGTCCTA | 3728 |
| | TAGGACGCCCCGCCCCCACCCTGGCCCCGCCCATACCGCA<br>GTTTTCCTCGTCAGATTTGT**C**CTTGCAGTCGGGGCCACCATC<br>ACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAGGCA | 3729 |
| | ACTGCAAG**G**ACAAATCT | 3730 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGATTTGTCCTTGCAGT | 3731 |
| Hypercholesterolaemia Asp203Gly GAC-GGC | GCCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGAT GGTGGCCCCGACTGCAAGGACAAATCTGACGAGGAAAACTG CGGTATGGGCGGGGCCAGGGTGGGGGCGGGGCGTCCTAT | 3732 |
| | ATAGGACGCCCCGCCCCCACCCTGGCCCCGCCCATACCGCA GTTTTCCTCGTCAGATTTGTCCTTGCAGTCGGGGCCACCATC ACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAGGC | 3733 |
| | CTGCAAGGACAAATCTG | 3734 |
| | CAGATTTGTCCTTGCAG | 3735 |
| Hypercholesterolaemia Asp203Val GAC-GTC | GCCTAAGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGAT GGTGGCCCCGACTGCAAGGACAAATCTGACGAGGAAAACTG CGGTATGGGCGGGGCCAGGGTGGGGGCGGGGCGTCCTAT | 3736 |
| | ATAGGACGCCCCGCCCCCACCCTGGCCCCGCCCATACCGCA GTTTTCCTCGTCAGATTTGTCCTTGCAGTCGGGGCCACCATC ACAGCGCCAGCTGGAGTGGATGCACTCGCCACTTAGGC | 3737 |
| | CTGCAAGGACAAATCTG | 3738 |
| | CAGATTTGTCCTTGCAG | 3739 |
| Hypercholesterolaemia Ser205Pro aTCT-CCT | AGTGGCGAGTGCATCCACTCCAGCTGGCGCTGTGATGGTGG CCCCGACTGCAAGGACAAATCTGACGAGGAAAACTGCGGTAT GGGCGGGGCCAGGGTGGGGGCGGGGCGTCCTATCACCT | 3740 |
| | AGGTGATAGGACGCCCCGCCCCCACCCTGGCCCCGCCCATA CCGCAGTTTTCCTCGTCAGATTTGTCCTTGCAGTCGGGGCCA CCATCACAGCGCCAGCTGGAGTGGATGCACTCGCCACT | 3741 |
| | AGGACAAATCTGACGAG | 3742 |
| | CTCGTCAGATTTGTCCT | 3743 |
| Hypercholesterolaemia Asp206Glu GACg-GAG | CGAGTGCATCCACTCCAGCTGGCGCTGTGATGGTGGCCCCG ACTGCAAGGACAAATCTGACGAGGAAAACTGCGGTATGGGC GGGGCCAGGGTGGGGGCGGGGCGTCCTATCACCTGTCCC | 3744 |
| | GGGACAGGTGATAGGACGCCCCGCCCCCACCCTGGCCCCG CCCATACCGCAGTTTTCCTCGTCAGATTTGTCCTTGCAGTCG GGGCCACCATCACAGCGCCAGCTGGAGTGGATGCACTCG | 3745 |
| | AAATCTGACGAGGAAAA | 3746 |
| | TTTTCCTCGTCAGATTT | 3747 |
| Hypercholesterolaemia Glu207Gln cGAG-CAG | GAGTGCATCCACTCCAGCTGGCGCTGTGATGGTGGCCCCGA CTGCAAGGACAAATCTGACGAGGAAAACTGCGGTATGGGCG GGGCCAGGGTGGGGGCGGGGCGTCCTATCACCTGTCCCT | 3748 |
| | AGGGACAGGTGATAGGACGCCCCGCCCCCACCCTGGCCCC GCCCATACCGCAGTTTTCCTCGTCAGATTTGTCCTTGCAGTC GGGGCCACCATCACAGCGCCAGCTGGAGTGGATGCACTC | 3749 |
| | AATCTGACGAGGAAAAC | 3750 |
| | GTTTTCCTCGTCAGATT | 3751 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Hypercholesterolaemia Glu207Lys cGAG-AAG | GAGTGCATCCACTCCAGCTGGCGCTGTGATGGTGGCCCCGA CTGCAAGGACAAATCTGACGAGGAAAACTGCGGTATGGGCG GGGCCAGGGTGGGGGCGGGGCGTCCTATCACCTGTCCCT | 3752 |
| | AGGGACAGGTGATAGGACGCCCCGCCCCCACCCTGGCCCC GCCCATACCGCAGTTTTCCTCGTCAGATTTGTCCTTGCAGTC GGGGCCACCATCACAGCGCCAGCTGGAGTGGATGCACTC | 3753 |
| | AATCTGACGAGGAAAAC | 3754 |
| | GTTTTCCTCGTCAGATT | 3755 |
| Hypercholesterolaemia Glu207Term cGAG-TAG | GAGTGCATCCACTCCAGCTGGCGCTGTGATGGTGGCCCCGA CTGCAAGGACAAATCTGACGAGGAAAACTGCGGTATGGGCG GGGCCAGGGTGGGGGCGGGGCGTCCTATCACCTGTCCCT | 3756 |
| | AGGGACAGGTGATAGGACGCCCCGCCCCCACCCTGGCCCC GCCCATACCGCAGTTTTCCTCGTCAGATTTGTCCTTGCAGTC GGGGCCACCATCACAGCGCCAGCTGGAGTGGATGCACTC | 3757 |
| | AATCTGACGAGGAAAAC | 3758 |
| | GTTTTCCTCGTCAGATT | 3759 |
| Hypercholesterolaemia Glu219Lys cGAA-AAA | TCTTGAGAAAATCAACACACTCTGTCCTGTTTTCCAGCTGTGG CCACCTGTCGCCCTGACGAATTCCAGTGCTCTGATGGAAACT GCATCCATGGCAGCCGGCAGTGTGACCGGGAATATG | 3760 |
| | CATATTCCCGGTCACACTGCCGGCTGCCATGGATGCAGTTTC CATCAGAGCACTGGAATTCGTCAGGGCGACAGGTGGCCACA GCTGGAAAACAGGACAGAGTGTGTTGATTTTCTCAAGA | 3761 |
| | GCCCTGACGAATTCCAG | 3762 |
| | CTGGAATTCGTCAGGGC | 3763 |
| Hypercholesterolaemia Gln221Term cCAG-TAG | GAAAATCAACACACTCTGTCCTGTTTTCCAGCTGTGGCCACCT GTCGCCCTGACGAATTCCAGTGCTCTGATGGAAACTGCATCC ATGGCAGCCGGCAGTGTGACCGGGAATATGACTGCA | 3764 |
| | TGCAGTCATATTCCCGGTCACACTGCCGGCTGCCATGGATGC AGTTTCCATCAGAGCACTGGAATTCGTCAGGGCGACAGGTGG CCACAGCTGGAAAACAGGACAGAGTGTGTTGATTTTC | 3765 |
| | ACGAATTCCAGTGCTCT | 3766 |
| | AGAGCACTGGAATTCGT | 3767 |
| Hypercholesterolaemia Cys227Phe TGC-TTC | CCTGTTTTCCAGCTGTGGCCACCTGTCGCCCTGACGAATTCC AGTGCTCTGATGGAAACTGCATCCATGGCAGCCGGCAGTGT GACCGGGAATATGACTGCAAGGACATGAGCGATGAAGT | 3768 |
| | ACTTCATCGCTCATGTCCTTGCAGTCATATTCCCGGTCACACT GCCGGCTGCCATGGATGCAGTTTCCATCAGAGCACTGGAATT CGTCAGGGCGACAGGTGGCCACAGCTGGAAAACAGG | 3769 |
| | TGGAAACTGCATCCATG | 3770 |
| | CATGGATGCAGTTTCCA | 3771 |
| Hypercholesterolaemia Asp235Glu GACc-GAA | TCCCCTGACGAATTCCAGTGCTCTGATGGAAACTGCATCCA TGGCAGCCGGCAGTGTGACCGGGAATATGACTGCAAGGACA TGAGCGATGAAGTTGGCTGCGTTAATGGTGAGCGCTGG | 3772 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCAGCGCTCACCATTAACGCAGCCAACTTCATCGCTCATGTC<br>CTTGCAGTCATATTCCCG**G**TCACACTGCCGGCTGCCATGGAT<br>GCAGTTTCCATCAGAGCACTGGAATTCGTCAGGGCGA | 3773 |
| | CAGTGTGA**C**CGGGAATA | 3774 |
| | TATTCCCG**G**TCACACTG | 3775 |
| Hypercholesterolaemia<br>Asp235Gly<br>GAC-GGC | GTCGCCCTGACGAATTCCAGTGCTCTGATGGAAACTGCATCC<br>ATGGCAGCCGGCAGTGTG**A**CCGGGAATATGACTGCAAGGAC<br>ATGAGCGATGAAGTTGGCTGCGTTAATGGTGAGCGCTG | 3776 |
| | CAGCGCTCACCATTAACGCAGCCAACTTCATCGCTCATGTCC<br>TTGCAGTCATATTCCCGG**T**CACACTGCCGGCTGCCATGGATG<br>CAGTTTCCATCAGAGCACTGGAATTCGTCAGGGCGAC | 3777 |
| | GCAGTGTG**A**CCGGGAAT | 3778 |
| | ATTCCCGG**T**CACACTGC | 3779 |
| Hypercholesterolaemia<br>Glu237Lys<br>gGAA-AAA | CCTGACGAATTCCAGTGCTCTGATGGAAACTGCATCCATGGC<br>AGCCGGCAGTGTGACCGG**G**AATATGACTGCAAGGACATGAG<br>CGATGAAGTTGGCTGCGTTAATGGTGAGCGCTGGCCAT | 3780 |
| | ATGGCCAGCGCTCACCATTAACGCAGCCAACTTCATCGCTCA<br>TGTCCTTGCAGTCATATT**C**CCGGTCACACTGCCGGCTGCCAT<br>GGATGCAGTTTCCATCAGAGCACTGGAATTCGTCAGG | 3781 |
| | GTGACCGG**G**AATATGAC | 3782 |
| | GTCATATT**C**CCGGTCAC | 3783 |
| Hypercholesterolaemia<br>Cys240Phe<br>TGC-TTC | TCCAGTGCTCTGATGGAAACTGCATCCATGGCAGCCGGCAGT<br>GTGACCGGGAATATGACT**G**CAAGGACATGAGCGATGAAGTTG<br>GCTGCGTTAATGGTGAGCGCTGGCCATCTGGTTTTCC | 3784 |
| | GGAAAACCAGATGGCCAGCGCTCACCATTAACGCAGCCAACT<br>TCATCGCTCATGTCCTTG**C**AGTCATATTCCCGGTCACACTGC<br>CGGCTGCCATGGATGCAGTTTCCATCAGAGCACTGGA | 3785 |
| | ATATGACT**G**CAAGGACA | 3786 |
| | TGTCCTTG**C**AGTCATAT | 3787 |
| Hypercholesterolaemia<br>Asp245Glu<br>GATg-GAA | AAACTGCATCCATGGCAGCCGGCAGTGTGACCGGGAATATG<br>ACTGCAAGGACATGAGCGA**T**GAAGTTGGCTGCGTTAATGGTG<br>AGCGCTGGCCATCTGGTTTTCCATCCCCCATTCTCTGT | 3788 |
| | ACAGAGAATGGGGGATGGAAAACCAGATGGCCAGCGCTCAC<br>CATTAACGCAGCCAACTTC**A**TCGCTCATGTCCTTGCAGTCATA<br>TTCCCGGTCACACTGCCGGCTGCCATGGATGCAGTTT | 3789 |
| | ATGAGCGA**T**GAAGTTGG | 3790 |
| | CCAACTTC**A**TCGCTCAT | 3791 |
| Hypercholesterolaemia<br>Cys249Tyr<br>TGC-TAC | ATGGCAGCCGGCAGTGTGACCGGGAATATGACTGCAAGGAC<br>ATGAGCGATGAAGTTGGCT**G**CGTTAATGGTGAGCGCTGGCC<br>ATCTGGTTTTCCATCCCCCATTCTCTGTGCCTTGCTGCT | 3792 |
| | AGCAGCAAGGCACAGAGAATGGGGGATGGAAAACCAGATGG<br>CCAGCGCTCACCATTAAC**C**AGCCAACTTCATCGCTCATGTC<br>CTTGCAGTCATATTCCCGGTCACACTGCCGGCTGCCAT | 3793 |
| | AGTTGGCT**G**CGTTAATG | 3794 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CATTAACGCAGCCAACT | 3795 |
| Hypercholesterolaemia<br>Glu256Lys<br>cGAG-AAG | AGGCTCAGACACACCTGACCTTCCTCCTTCCTCTCTCTGGCT<br>CTCACAGTGACACTCTGCGAGGGACCCAACAAGTTCAAGTGT<br>CACAGCGGCGAATGCATCACCCTGGACAAAGTCTGCA | 3796 |
| | TGCAGACTTTGTCCAGGGTGATGCATTCGCCGCTGTGACACT<br>TGAACTTGTTGGGTCCCTCGCAGAGTGTCACTGTGAGAGCCA<br>GAGAGAGGAAGGAGGAAGGTCAGGTGTGTCTGAGCCT | 3797 |
| | CACTCTGCGAGGGACCC | 3798 |
| | GGGTCCCTCGCAGAGTG | 3799 |
| Hypercholesterolaemia<br>Ser265Arg<br>AGCg-AGA | CCTCTCTCTGGCTCTCACAGTGACACTCTGCGAGGGACCCAA<br>CAAGTTCAAGTGTCACAGCGGCGAATGCATCACCCTGGACAA<br>AGTCTGCAACATGGCTAGAGACTGCCGGGACTGGTCA | 3800 |
| | TGACCAGTCCCGGCAGTCTCTAGCCATGTTGCAGACTTTGTC<br>CAGGGTGATGCATTCGCCGCTGTGACACTTGAACTTGTTGGG<br>TCCCTCGCAGAGTGTCACTGTGAGAGCCAGAGAGAGG | 3801 |
| | TGTCACAGCGGCGAATG | 3802 |
| | CATTCGCCGCTGTGACA | 3803 |
| Hypercholesterolaemia<br>Glu267Lys<br>cGAA-AAA | TCTCTGGCTCTCACAGTGACACTCTGCGAGGGACCCAACAAG<br>TTCAAGTGTCACAGCGGCGAATGCATCACCCTGGACAAAGTC<br>TGCAACATGGCTAGAGACTGCCGGGACTGGTCAGATG | 3804 |
| | CATCTGACCAGTCCCGGCAGTCTCTAGCCATGTTGCAGACTT<br>TGTCCAGGGTGATGCATTCGCCGCTGTGACACTTGAACTTGT<br>TGGGTCCCTCGCAGAGTGTCACTGTGAGAGCCAGAGA | 3805 |
| | ACAGCGGCGAATGCATC | 3806 |
| | GATGCATTCGCCGCTGT | 3807 |
| Hypercholesterolaemia<br>Glu267Term<br>cGAA-TAA | TCTCTGGCTCTCACAGTGACACTCTGCGAGGGACCCAACAAG<br>TTCAAGTGTCACAGCGGCGAATGCATCACCCTGGACAAAGTC<br>TGCAACATGGCTAGAGACTGCCGGGACTGGTCAGATG | 3808 |
| | CATCTGACCAGTCCCGGCAGTCTCTAGCCATGTTGCAGACTT<br>TGTCCAGGGTGATGCATTCGCCGCTGTGACACTTGAACTTGT<br>TGGGTCCCTCGCAGAGTGTCACTGTGAGAGCCAGAGA | 3809 |
| | ACAGCGGCGAATGCATC | 3810 |
| | GATGCATTCGCCGCTGT | 3811 |
| Hypercholesterolaemia<br>Lys273Glu<br>cAAA-GAA | ACACTCTGCGAGGGACCCAACAAGTTCAAGTGTCACAGCGG<br>CGAATGCATCACCCTGGACAAAGTCTGCAACATGGCTAGAGA<br>CTGCCGGGACTGGTCAGATGAACCCATCAAAGAGTGCG | 3812 |
| | CGCACTCTTTGATGGGTTCATCTGACCAGTCCCGGCAGTCTC<br>TAGCCATGTTGCAGACTTTGTCCAGGGTGATGCATTCGCCGC<br>TGTGACACTTGAACTTGTTGGGTCCCTCGCAGAGTGT | 3813 |
| | CCCTGGACAAAGTCTGC | 3814 |
| | GCAGACTTTGTCCAGGG | 3815 |
| Hypercholesterolaemia<br>Cys275Term<br>TGCa-TGA | CGAGGGACCCAACAAGTTCAAGTGTCACAGCGGCGAATGCA<br>TCACCCTGGACAAAGTCTGCAACATGGCTAGAGACTGCCGG<br>GACTGGTCAGATGAACCCATCAAAGAGTGCGGTGAGTCT | 3816 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGACTCACCGCACTCTTTGATGGGTTCATCTGACCAGTCCCG GCAGTCTCTAGCCATGTTGCAGACTTTGTCCAGGGTGATGCA TTCGCCGCTGTGACACTTGAACTTGTTGGGTCCCTCG | 3817 |
| | AAAGTCTGCAACATGGC | 3818 |
| | GCCATGTTGCAGACTTT | 3819 |
| Hypercholesterolaemia Asp280Gly GAC-GGC | AGTTCAAGTGTCACAGCGGCGAATGCATCACCCTGGACAAAG TCTGCAACATGGCTAGAGACTGCCGGGACTGGTCAGATGAA CCCATCAAAGAGTGCGGTGAGTCTCGGTGCAGGCGGCT | 3820 |
| | AGCCGCCTGCACCGAGACTCACCGCACTCTTTGATGGGTTCA TCTGACCAGTCCCGGCAGTCTCTAGCCATGTTGCAGACTTTG TCCAGGGTGATGCATTCGCCGCTGTGACACTTGAACT | 3821 |
| | GGCTAGAGACTGCCGGG | 3822 |
| | CCCGGCAGTCTCTAGCC | 3823 |
| Hypercholesterolaemia Cys281Tyr TGC-TAC | TCAAGTGTCACAGCGGCGAATGCATCACCCTGGACAAAGTCT GCAACATGGCTAGAGACTGCCGGGACTGGTCAGATGAACCC ATCAAAGAGTGCGGTGAGTCTCGGTGCAGGCGGCTTGC | 3824 |
| | GCAAGCCGCCTGCACCGAGACTCACCGCACTCTTTGATGGG TTCATCTGACCAGTCCCGGCAGTCTCTAGCCATGTTGCAGAC TTTGTCCAGGGTGATGCATTCGCCGCTGTGACACTTGA | 3825 |
| | TAGAGACTGCCGGGACT | 3826 |
| | AGTCCCGGCAGTCTCTA | 3827 |
| Hypercholesterolaemia Asp283Asn gGAC-AAC | TGTCACAGCGGCGAATGCATCACCCTGGACAAAGTCTGCAAC ATGGCTAGAGACTGCCGGGACTGGTCAGATGAACCCATCAAA GAGTGCGGTGAGTCTCGGTGCAGGCGGCTTGCAGAGT | 3828 |
| | ACTCTGCAAGCCGCCTGCACCGAGACTCACCGCACTCTTTGA TGGGTTCATCTGACCAGTCCCGGCAGTCTCTAGCCATGTTGC AGACTTTGTCCAGGGTGATGCATTCGCCGCTGTGACA | 3829 |
| | ACTGCCGGGACTGGTCA | 3830 |
| | TGACCAGTCCCGGCAGT | 3831 |
| Hypercholesterolaemia Asp283Glu GACt-GAG | TCACAGCGGCGAATGCATCACCCTGGACAAAGTCTGCAACAT GGCTAGAGACTGCCGGGACTGGTCAGATGAACCCATCAAAG AGTGCGGTGAGTCTCGGTGCAGGCGGCTTGCAGAGTTT | 3832 |
| | AAACTCTGCAAGCCGCCTGCACCGAGACTCACCGCACTCTTT GATGGGTTCATCTGACCAGTCCCGGCAGTCTCTAGCCATGTT GCAGACTTTGTCCAGGGTGATGCATTCGCCGCTGTGA | 3833 |
| | TGCCGGGACTGGTCAGA | 3834 |
| | TCTGACCAGTCCCGGCA | 3835 |
| Hypercholesterolaemia Asp283Tyr gGAC-TAC | TGTCACAGCGGCGAATGCATCACCCTGGACAAAGTCTGCAAC ATGGCTAGAGACTGCCGGGACTGGTCAGATGAACCCATCAAA GAGTGCGGTGAGTCTCGGTGCAGGCGGCTTGCAGAGT | 3836 |
| | ACTCTGCAAGCCGCCTGCACCGAGACTCACCGCACTCTTTGA TGGGTTCATCTGACCAGTCCCGGCAGTCTCTAGCCATGTTGC AGACTTTGTCCAGGGTGATGCATTCGCCGCTGTGACA | 3837 |
| | ACTGCCGGGACTGGTCA | 3838 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGACCAGTCCCGGCAGT | 3839 |
| Hypercholesterolaemia<br>Trp284Term<br>TGGt-TGA | CAGCGGCGAATGCATCACCCTGGACAAAGTCTGCAACATGG<br>CTAGAGACTGCCGGGACTGGTCAGATGAACCCATCAAAGAGT<br>GCGGTGAGTCTCGGTGCAGGCGGCTTGCAGAGTTTGTG | 3840 |
| | CACAAACTCTGCAAGCCGCCTGCACCGAGACTCACCGCACT<br>CTTTGATGGGTTCATCTGACCAGTCCCGGCAGTCTCTAGCCA<br>TGTTGCAGACTTTGTCCAGGGTGATGCATTCGCCGCTG | 3841 |
| | CGGGACTGGGTCAGATGA | 3842 |
| | TCATCTGACCAGTCCCG | 3843 |
| Hypercholesterolaemia<br>Ser285Leu<br>TCA-TTA | GCGGCGAATGCATCACCCTGGACAAAGTCTGCAACATGGCTA<br>GAGACTGCCGGGACTGGTCAGATGAACCCATCAAAGAGTGC<br>GGTGAGTCTCGGTGCAGGCGGCTTGCAGAGTTTGTGGG | 3844 |
| | CCCACAAACTCTGCAAGCCGCCTGCACCGAGACTCACCGCA<br>CTCTTTGATGGGTTCATCTGACCAGTCCCGGCAGTCTCTAGC<br>CATGTTGCAGACTTTGTCCAGGGTGATGCATTCGCCGC | 3845 |
| | GGACTGGTCAGATGAAC | 3846 |
| | GTTCATCTGACCAGTCC | 3847 |
| Hypercholesterolaemia<br>Lys290Arg<br>AAA-AGA | CCCTGGACAAAGTCTGCAACATGGCTAGAGACTGCCGGGAC<br>TGGTCAGATGAACCCATCAAAGAGTGCGGTGAGTCTCGGTG<br>CAGGCGGCTTGCAGAGTTTGTGGGGAGCCAGGAAAGGGA | 3848 |
| | TCCCTTTCCTGGCTCCCCACAAACTCTGCAAGCCGCCTGCAC<br>CGAGACTCACCGCACTCTTTGATGGGTTCATCTGACCAGTCC<br>CGGCAGTCTCTAGCCATGTTGCAGACTTTGTCCAGGG | 3849 |
| | ACCCATCAAAGAGTGCG | 3850 |
| | CGCACTCTTTGATGGGT | 3851 |
| Hypercholesterolaemia<br>Cys297Phe<br>TGC-TTC | GGGTAGGGGCCCGAGAGTGACCAGTCTGCATCCCCTGGCCC<br>TGCGCAGGGACCAACGAATGCTTGGACAACAACGGCGGCTG<br>TTCCCACGTCTGCAATGACCTTAAGATCGGCTACGAGTG | 3852 |
| | CACTCGTAGCCGATCTTAAGGTCATTGCAGACGTGGGAACAG<br>CCGCCGTTGTTGTCCAAGCATTCGTTGGTCCCTGCGCAGGG<br>CCAGGGGATGCAGACTGGTCACTCTCGGGCCCCTACCC | 3853 |
| | CAACGAATGCTTGGACA | 3854 |
| | TGTCCAAGCATTCGTTG | 3855 |
| Hypercholesterolaemia<br>Cys297Tyr<br>TGC-TAC | GGGTAGGGGCCCGAGAGTGACCAGTCTGCATCCCCTGGCCC<br>TGCGCAGGGACCAACGAATGCTTGGACAACAACGGCGGCTG<br>TTCCCACGTCTGCAATGACCTTAAGATCGGCTACGAGTG | 3856 |
| | CACTCGTAGCCGATCTTAAGGTCATTGCAGACGTGGGAACAG<br>CCGCCGTTGTTGTCCAAGCATTCGTTGGTCCCTGCGCAGGG<br>CCAGGGGATGCAGACTGGTCACTCTCGGGCCCCTACCC | 3857 |
| | CAACGAATGCTTGGACA | 3858 |
| | TGTCCAAGCATTCGTTG | 3859 |
| Hypercholesterolaemia<br>His306Tyr<br>cCAC-TAC | TGCATCCCCTGGCCCTGCGCAGGGACCAACGAATGCTTGGA<br>CAACAACGGCGGCTGTTCCCACGTCTGCAATGACCTTAAGAT<br>CGGCTACGAGTGCCTGTGCCCCGACGGCTTCCAGCTGG | 3860 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CCAGCTGGAAGCCGTCGGGGCACAGGCACTCGTAGCCGATC TTAAGGTCATTGCAGACGTGGGAACAGCCGCCGTTGTTGTCC AAGCATTCGTTGGTCCCTGCGCAGGGCCAGGGGATGCA | 3861 |
| | GCTGTTCCCACGTCTGC | 3862 |
| | GCAGACGTGGGAACAGC | 3863 |
| Hypercholesterolaemia Cys308Gly cTGC-GGC | CCCTGGCCCTGCGCAGGGACCAACGAATGCTTGGACAACAA CGGCGGCTGTTCCCACGTCTGCAATGACCTTAAGATCGGCTA CGAGTGCCTGTGCCCCGACGGCTTCCAGCTGGTGGCCC | 3864 |
| | GGGCCACCAGCTGGAAGCCGTCGGGGCACAGGCACTCGTA GCCGATCTTAAGGTCATTGCAGACGTGGGAACAGCCGCCGT TGTTGTCCAAGCATTCGTTGGTCCCTGCGCAGGGCCAGGG | 3865 |
| | CCCACGTCTGCAATGAC | 3866 |
| | GTCATTGCAGACGTGGG | 3867 |
| Hypercholesterolaemia Cys308Tyr TGC-TAC | CCTGGCCCTGCGCAGGGACCAACGAATGCTTGGACAACAAC GGCGGCTGTTCCCACGTCTGCAATGACCTTAAGATCGGCTAC GAGTGCCTGTGCCCCGACGGCTTCCAGCTGGTGGCCCA | 3868 |
| | TGGGCCACCAGCTGGAAGCCGTCGGGGCACAGGCACTCGTA GCCGATCTTAAGGTCATTGCAGACGTGGGAACAGCCGCCGTT GTTGTCCAAGCATTCGTTGGTCCCTGCGCAGGGCCAGG | 3869 |
| | CCACGTCTGCAATGACC | 3870 |
| | GGTCATTGCAGACGTGG | 3871 |
| Hypercholesterolaemia Gly314Ser cGGC-AGC | ACCAACGAATGCTTGGACAACAACGGCGGCTGTTCCCACGTC TGCAATGACCTTAAGATCGGCTACGAGTGCCTGTGCCCCGAC GGCTTCCAGCTGGTGGCCCAGCGAAGATGCGAAGGTG | 3872 |
| | CACCTTCGCATCTTCGCTGGGCCACCAGCTGGAAGCCGTCG GGGCACAGGCACTCGTAGCCGATCTTAAGGTCATTGCAGAC GTGGGAACAGCCGCCGTTGTTGTCCAAGCATTCGTTGGT | 3873 |
| | TTAAGATCGGCTACGAG | 3874 |
| | CTCGTAGCCGATCTTAA | 3875 |
| Hypercholesterolaemia Gly314Val GGC-GTC | CCAACGAATGCTTGGACAACAACGGCGGCTGTTCCCACGTCT GCAATGACCTTAAGATCGGCTACGAGTGCCTGTGCCCCGAC GGCTTCCAGCTGGTGGCCCAGCGAAGATGCGAAGGTGA | 3876 |
| | TCACCTTCGCATCTTCGCTGGGCCACCAGCTGGAAGCCGTC GGGGCACAGGCACTCGTAGCCGATCTTAAGGTCATTGCAGA CGTGGGAACAGCCGCCGTTGTTGTCCAAGCATTCGTTGG | 3877 |
| | TAAGATCGGCTACGAGT | 3878 |
| | ACTCGTAGCCGATCTTA | 3879 |
| Hypercholesterolaemia Tyr315Term TACg-TAA | CGAATGCTTGGACAACAACGGCGGCTGTTCCCACGTCTGCAA TGACCTTAAGATCGGCTACGAGTGCCTGTGCCCCGACGGCTT CCAGCTGGTGGCCCAGCGAAGATGCGAAGGTGATTTC | 3880 |
| | GAAATCACCTTCGCATCTTCGCTGGGCCACCAGCTGGAAGCC GTCGGGGCACAGGCACTCGTAGCCGATCTTAAGGTCATTGCA GACGTGGGAACAGCCGCCGTTGTTGTCCAAGCATTCG | 3881 |
| | ATCGGCTACGAGTGCCT | 3882 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGGCACTC**G**TAGCCGAT | 3883 |
| Hypercholesterolaemia Cys317Gly gTGC-GGC | TGCTTGGACAACAACGGCGGCTGTTCCCACGTCTGCAATGAC CTTAAGATCGGCTACGAG**T**GCCTGTGCCCCGACGGCTTCCA GCTGGTGGCCCAGCGAAGATGCGAAGGTGATTTCCGGG | 3884 |
| | CCCGGAAATCACCTTCGCATCTTCGCTGGGCCACCAGCTGG AAGCCGTCGGGGCACAGGC**A**CTCGTAGCCGATCTTAAGGTC ATTGCAGACGTGGGAACAGCCGCCGTTGTTGTCCAAGCA | 3885 |
| | GCTACGAG**T**GCCTGTGC | 3886 |
| | GCACAGGC**A**CTCGTAGC | 3887 |
| Hypercholesterolaemia Cys317Ser gTGC-AGC | TGCTTGGACAACAACGGCGGCTGTTCCCACGTCTGCAATGAC CTTAAGATCGGCTACGAG**T**GCCTGTGCCCCGACGGCTTCCA GCTGGTGGCCCAGCGAAGATGCGAAGGTGATTTCCGGG | 3888 |
| | CCCGGAAATCACCTTCGCATCTTCGCTGGGCCACCAGCTGG AAGCCGTCGGGGCACAGGC**A**CTCGTAGCCGATCTTAAGGTC ATTGCAGACGTGGGAACAGCCGCCGTTGTTGTCCAAGCA | 3889 |
| | GCTACGAG**T**GCCTGTGC | 3890 |
| | GCACAGGC**A**CTCGTAGC | 3891 |
| Hypercholesterolaemia Pro320Arg CCC-CGC | ACAACGGCGGCTGTTCCCACGTCTGCAATGACCTTAAGATCG GCTACGAGTGCCTGTGCC**C**CGACGGCTTCCAGCTGGTGGCC CAGCGAAGATGCGAAGGTGATTTCCGGGTGGGACTGAG | 3892 |
| | CTCAGTCCCACCCGGAAATCACCTTCGCATCTTCGCTGGGCC ACCAGCTGGAAGCCGTCG**G**GGCACAGGCACTCGTAGCCGAT CTTAAGGTCATTGCAGACGTGGGAACAGCCGCCGTTGT | 3893 |
| | CCTGTGCC**C**CGACGGCT | 3894 |
| | AGCCGTCG**G**GGCACAGG | 3895 |
| Hypercholesterolaemia Asp321Asn cGAC-AAC | AACGGCGGCTGTTCCCACGTCTGCAATGACCTTAAGATCGGC TACGAGTGCCTGTGCCCC**G**ACGGCTTCCAGCTGGTGGCCCA GCGAAGATGCGAAGGTGATTTCCGGGTGGGACTGAGCC | 3896 |
| | GGCTCAGTCCCACCCGGAAATCACCTTCGCATCTTCGCTGGG CCACCAGCTGGAAGCCGT**C**GGGGCACAGGCACTCGTAGCCG ATCTTAAGGTCATTGCAGACGTGGGAACAGCCGCCGTT | 3897 |
| | TGTGCCCC**G**ACGGCTTC | 3898 |
| | GAAGCCGT**C**GGGGCACA | 3899 |
| Hypercholesterolaemia Asp321Glu GACg-GAG | CGGCGGCTGTTCCCACGTCTGCAATGACCTTAAGATCGGCTA CGAGTGCCTGTGCCCCGA**C**GGCTTCCAGCTGGTGGCCCAGC GAAGATGCGAAGGTGATTTCCGGGTGGGACTGAGCCCT | 3900 |
| | AGGGCTCAGTCCCACCCGGAAATCACCTTCGCATCTTCGCTG GGCCACCAGCTGGAAGCC**G**TCGGGGCACAGGCACTCGTAG CCGATCTTAAGGTCATTGCAGACGTGGGAACAGCCGCCG | 3901 |
| | TGCCCCGA**C**GGCTTCCA | 3902 |
| | TGGAAGCC**G**TCGGGGCA | 3903 |
| Hypercholesterolaemia Gly322Ser cGGC-AGC | GGCGGCTGTTCCCACGTC[illegible]GCAATGACCTTAAGATCGGCTAC GAGTGCCTGTGCCCCGAC**G**GCTTCCAGCTGGTGGCCCAGCG AAGATGCGAAGGTGATTTCCGGGTGGGACTGAGCCCTG | 3904 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CAGGGCTCAGTCCCACCCGGAAATCACCTTCGCATCTTCGCT<br>GGGCCACCAGCTGGAAGC**C**GTCGGGGCACAGGCACTCGTA<br>GCCGATCTTAAGGTCATTGCAGACGTGGGAACAGCCGCC | 3905 |
| | GCCCCGAC**G**GCTTCCAG | 3906 |
| | CTGGAAGC**C**GTCGGGGC | 3907 |
| Hypercholesterolaemia<br>Gln324Term<br>cCAG-TAG | TGTTCCCACGTCTGCAATGACCTTAAGATCGGCTACGAGTGC<br>CTGTGCCCCGACGGCTTC**C**AGCTGGTGGCCCAGCGAAGATG<br>CGAAGGTGATTTCCGGGTGGGACTGAGCCCTGGGCCCC | 3908 |
| | GGGGCCCAGGGCTCAGTCCCACCCGGAAATCACCTTCGCAT<br>CTTCGCTGGGCCACCAGCT**G**GAAGCCGTCGGGGCACAGGCA<br>CTCGTAGCCGATCTTAAGGTCATTGCAGACGTGGGAACA | 3909 |
| | ACGGCTTC**C**AGCTGGTG | 3910 |
| | CACCAGCT**G**GAAGCCGT | 3911 |
| Hypercholesterolaemia<br>Arg329Pro<br>CGA-CCA | ATGACCTTAAGATCGGCTACGAGTGCCTGTGCCCCGACGGC<br>TTCCAGCTGGTGGCCCAGC**G**AAGATGCGAAGGTGATTTCCG<br>GGTGGGACTGAGCCCTGGGCCCCCTCTGCGCTTCCTGAC | 3912 |
| | GTCAGGAAGCGCAGAGGGGGCCCAGGGCTCAGTCCCACCC<br>GGAAATCACCTTCGCATCTT**C**GCTGGGCCACCAGCTGGAAG<br>CCGTCGGGGCACAGGCACTCGTAGCCGATCTTAAGGTCAT | 3913 |
| | GGCCCAGC**G**AAGATGCG | 3914 |
| | CGCATCTT**C**GCTGGGCC | 3915 |
| Hypercholesterolaemia<br>Arg329Term<br>gCGA-TGA | AATGACCTTAAGATCGGCTACGAGTGCCTGTGCCCCGACGG<br>CTTCCAGCTGGTGGCCCAG**C**GAAGATGCGAAGGTGATTTCC<br>GGGTGGGACTGAGCCCTGGGCCCCCTCTGCGCTTCCTGA | 3916 |
| | TCAGGAAGCGCAGAGGGGGCCCAGGGCTCAGTCCCACCCG<br>GAAATCACCTTCGCATCTTC**G**CTGGGCCACCAGCTGGAAGCC<br>GTCGGGGCACAGGCACTCGTAGCCGATCTTAAGGTCATT | 3917 |
| | TGGCCCAG**C**GAAGATGC | 3918 |
| | GCATCTTC**G**CTGGGCCA | 3919 |
| Hypercholesterolaemia<br>Glu336Lys<br>tGAG-AAG | TCTAGCCATTGGGGAAGAGCCTCCCCACCAAGCCTCTTTCTC<br>TCTCTTCCAGATATCGAT**G**AGTGTCAGGATCCCGACACCTGC<br>AGCCAGCTCTGCGTGAACCTGGAGGGTGGCTACAAGT | 3920 |
| | ACTTGTAGCCACCCTCCAGGTTCACGCAGAGCTGGCTGCAG<br>GTGTCGGGATCCTGACACT**C**ATCGATATCTGGAAGAGAGAGA<br>AAGAGGCTTGGTGGGGAGGCTCTTCCCCAATGGCTAGA | 3921 |
| | ATATCGAT**G**AGTGTCAG | 3922 |
| | CTGACACT**C**ATCGATAT | 3923 |
| Hypercholesterolaemia<br>Gln338Term<br>tCAG-TAG | CATTGGGGAAGAGCCTCCCCACCAAGCCTCTTTCTCTCTCTT<br>CCAGATATCGATGAGTGT**C**AGGATCCCGACACCTGCAGCCAG<br>CTCTGCGTGAACCTGGAGGGTGGCTACAAGTGCCAGT | 3924 |
| | ACTGGCACTTGTAGCCACCCTCCAGGTTCACGCAGAGCTGG<br>CTGCAGGTGTCGGGATCCT**G**ACACTCATCGATATC.GGAAGA<br>GAGAGAAAGAGGCTTGGTGGGGAGGCTCTTCCCCAATG | 3925 |
| | ATGAGTGT**C**AGGATCCC | 3926 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GGGATCCTGACACTCAT | 3927 |
| Hypercholesterolaemia Cys343Arg cTGC-CGC | TCCCCACCAAGCCTCTTTCTCTCTCTTCCAGATATCGATGAGT GTCAGGATCCCGACACCTGCAGCCAGCTCTGCGTGAACCTG GAGGGTGGCTACAAGTGCCAGTGTGAGGAAGGCTTCC | 3928 |
| | GGAAGCCTTCCTCACACTGGCACTTGTAGCCACCCTCCAGGT TCACGCAGAGCTGGCTGCAGGTGTCGGGATCCTGACACTCA TCGATATCTGGAAGAGAGAGAAAGAGGCTTGGTGGGGA | 3929 |
| | CCGACACCTGCAGCCAG | 3930 |
| | CTGGCTGCAGGTGTCGG | 3931 |
| Hypercholesterolaemia Gln345Arg CAG-CGG | CAAGCCTCTTTCTCTCTCTTCCAGATATCGATGAGTGTCAGGA TCCCGACACCTGCAGCCAGCTCTGCGTGAACCTGGAGGGTG GCTACAAGTGCCAGTGTGAGGAAGGCTTCCAGCTGGA | 3932 |
| | TCCAGCTGGAAGCCTTCCTCACACTGGCACTTGTAGCCACCC TCCAGGTTCACGCAGAGCTGGCTGCAGGTGTCGGGATCCTG ACACTCATCGATATCTGGAAGAGAGAGAAAGAGGCTTG | 3933 |
| | CTGCAGCCAGCTCTGCG | 3934 |
| | CGCAGAGCTGGCTGCAG | 3935 |
| Hypercholesterolaemia Cys347Tyr TGC-TAC | TCTTTCTCTCTCTTCCAGATATCGATGAGTGTCAGGATCCCGA CACCTGCAGCCAGCTCTGCGTGAACCTGGAGGGTGGCTACA AGTGCCAGTGTGAGGAAGGCTTCCAGCTGGACCCCCA | 3936 |
| | TGGGGGTCCAGCTGGAAGCCTTCCTCACACTGGCACTTGTA GCCACCCTCCAGGTTCACGCAGAGCTGGCTGCAGGTGTCGG GATCCTGACACTCATCGATATCTGGAAGAGAGAGAAAGA | 3937 |
| | CCAGCTCTGCGTGAACC | 3938 |
| | GGTTCACGCAGAGCTGG | 3939 |
| Hypercholesterolaemia Cys347Arg cTGC-CGC | CTCTTTCTCTCTCTTCCAGATATCGATGAGTGTCAGGATCCCG ACACCTGCAGCCAGCTCTGCGTGAACCTGGAGGGTGGCTAC AAGTGCCAGTGTGAGGAAGGCTTCCAGCTGGACCCCC | 3940 |
| | GGGGGTCCAGCTGGAAGCCTTCCTCACACTGGCACTTGTAG CCACCCTCCAGGTTCACGCAGAGCTGGCTGCAGGTGTCGGG ATCCTGACACTCATCGATATCTGGAAGAGAGAGAAAGAG | 3941 |
| | GCCAGCTCTGCGTGAAC | 3942 |
| | GTTCACGCAGAGCTGGC | 3943 |
| Hypercholesterolaemia Gly352Asp GGT-GAT | CAGATATCGATGAGTGTCAGGATCCCGACACCTGCAGCCAGC TCTGCGTGAACCTGGAGGGTGGCTACAAGTGCCAGTGTGAG GAAGGCTTCCAGCTGGACCCCCACACGAAGGCCTGCAA | 3944 |
| | TTGCAGGCCTTCGTGTGGGGGTCCAGCTGGAAGCCTTCCTC ACACTGGCACTTGTAGCCACCCTCCAGGTTCACGCAGAGCTG GCTGCAGGTGTCGGGATCCTGACACTCATCGATATCTG | 3945 |
| | CCTGGAGGGTGGCTACA | 3946 |
| | TGTAGCCACCCTCCAGG | 3947 |
| Hypercholesterolaemia Tyr354Cys TAC-TGC | TCGATGAGTGTCAGGATCCCGACACCTGCAGCCAGCTCTGC GTGAACCTGGAGGGTGGCTACAAGTGCCAGTGTGAGGAAGG CTTCCAGCTGGACCCCCACACGAAGGCCTGCAAGGCTGT | 3948 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACAGCCTTGCAGGCCTTCGTGTGGGGGTCCAGCTGGAAGCC<br>TTCCTCACACTGGCACTTGTAGCCACCCTCCAGGTTCACGCA<br>GAGCTGGCTGCAGGTGTCGGGATCCTGACACTCATCGA | 3949 |
| | GGGTGGCTACAAGTGCC | 3950 |
| | GGCACTTGTAGCCACCC | 3951 |
| Hypercholesterolaemia<br>Cys358Arg<br>gTGT-CGT | CAGGATCCCGACACCTGCAGCCAGCTCTGCGTGAACCTGGA<br>GGGTGGCTACAAGTGCCAGTGTGAGGAAGGCTTCCAGCTGG<br>ACCCCCACACGAAGGCCTGCAAGGCTGTGGGTGAGCACG | 3952 |
| | CGTGCTCACCCACAGCCTTGCAGGCCTTCGTGTGGGGGTCC<br>AGCTGGAAGCCTTCCTCACACTGGCACTTGTAGCCACCCTCC<br>AGGTTCACGCAGAGCTGGCTGCAGGTGTCGGGATCCTG | 3953 |
| | AGTGCCAGTGTGAGGAA | 3954 |
| | TTCCTCACACTGGCACT | 3955 |
| Hypercholesterolaemia<br>Gln363Term<br>cCAG-TAG | TGCAGCCAGCTCTGCGTGAACCTGGAGGGTGGCTACAAGTG<br>CCAGTGTGAGGAAGGCTTCCAGCTGGACCCCCACACGAAGG<br>CCTGCAAGGCTGTGGGTGAGCACGGGAAGGCGGCGGGTG | 3956 |
| | CACCCGCCGCCTTCCCGTGCTCACCCACAGCCTTGCAGGCC<br>TTCGTGTGGGGGTCCAGCTGGAAGCCTTCCTCACACTGGCA<br>CTTGTAGCCACCCTCCAGGTTCACGCAGAGCTGGCTGCA | 3957 |
| | AAGGCTTCCAGCTGGAC | 3958 |
| | GTCCAGCTGGAAGCCTT | 3959 |

## EXAMPLE 22
## UDP-glucuronosyltransferase - UGT1

Mutations in the human UGT1 gene result in a range of disease syndromes, ranging from relatively common diseases such as Gilbert's syndrome, which effects up to 7% of the population, to rare disorders such as Crigler-Najjar syndrome. Symptoms of these diseases are the result of diminished bilirubin conjugation and typically present with jaundice or, when mild, as an incidental finding during routing laboratory analysis. Severe cases of Crigler-Najjar syndrome are caused by an absence of UGT1 activity and the majority of these patients die in the neonatal period. The only known treatment is liver transplant. The attached table discloses the correcting oligonucleotide base sequences for the UGT1 oligonucleotides of the invention.

**Table 29**
**UGT1 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Crigler-Najjar syndrome 2<br>Leu15Arg<br>CTG-CGG | GCAGGAGCAAAGGCGCCATGGCTGTGGAGTCCCAGGGCGG<br>ACGCCCACTTGTCCTGGGCC**T**GCTGCTGTGTGTGCTGGGCC<br>CAGTGGTGTCCCATGCTGGGAAGATACTGTTGATCCCAGT | 3960 |
| | ACTGGGATCAACAGTATCTTCCCAGCATGGGACACCACTGGG<br>CCCAGCACACACAGCAGC**A**GGCCCAGGACAAGTGGGCGTCC<br>GCCCTGGGACTCCACAGCCATGGCGCCTTTGCTCCTGC | 3961 |
| | CCTGGGCC**T**GCTGCTGT | 3962 |
| | ACAGCAGC**A**GGCCCAGG | 3963 |
| Crigler-Najjar syndrome 1<br>Gln49Term<br>CAG-TAG | GGGAAGATACTGTTGATCCCAGTGGATGGCAGCCACTGGCT<br>GAGCATGCTTGGGGCCATC**C**AGCAGCTGCAGCAGAGGGGAC<br>ATGAAATAGTTGTCCTAGCACCTGACGCCTCGTTGTACA | 3964 |
| | TGTACAACGAGGCGTCAGGTGCTAGGACAACTATTTCATGTC<br>CCCTCTGCTGCAGCTGCT**G**GATGGCCCCAAGCATGCTCAGC<br>CAGTGGCTGCCATCCACTGGGATCAACAGTATCTTCCC | 3965 |
| | GGGCCATC**C**AGCAGCTG | 3966 |
| | CAGCTGCT**G**GATGGCCC | 3967 |
| Crigler-Najjar syndrome 1<br>Gly71Arg<br>GGA-AGA | CAGCAGAGGGGACATGAAATAGTTGTCCTAGCACCTGACGCC<br>TCGTTGTACATCAGAGAC**G**GAGCATTTTACACCTTGAAGACGT<br>ACCCTGTGCCATTCCAAAGGGAGGATGTGAAAGAGT | 3968 |
| | ACTCTTTCACATCCTCCCTTTGGAATGGCACAGGGTACGTCTT<br>CAAGGTGTAAAATGCTC**C**GTCTCTGATGTACAACGAGGCGTC<br>AGGTGCTAGGACAACTATTTCATGTCCCCTCTGCTG | 3969 |
| | TCAGAGAC**G**GAGCATTT | 3970 |
| | AAATGCTC**C**GTCTCTGA | 3971 |
| Gilbert syndrome<br>Pro229Gln<br>CCG-CAG | GGGTGAAGAACATGCTCATTGCCTTTTCACAGAACTTTCTGTG<br>CGACGTGGTTTATTCCC**C**GTATGCAACCCTTGCCTCAGAATT<br>CCTTCAGAGAGAGGTGACTGTCCAGGACCTATTGAG | 3972 |
| | CTCAATAGGTCCTGGACAGTCACCTCTCTCTGAAGGAATTCT<br>GAGGCAAGGGTTGCATAC**G**GGGAATAAACCACGTCGCACAG<br>AAAGTTCTGTGAAAAGGCAATGAGCATGTTCTTCACCC | 3973 |
| | TTATTCCC**C**GTATGCAA | 3974 |
| | TTGCATAC**G**GGGAATAA | 3975 |
| Crigler-Najjar syndrome 1<br>Cys280Term<br>TGC-TGA | TGTGAAGGATTACCCTAGGCCCATCATGCCCAATATGGTTTTT<br>GTTGGTGGAATCAACTG**C**CTTCACCAAAATCCACTATCCCAG<br>GTGTGTATTGGAGTGGGACTTTTACATGCGTATATT | 3976 |
| | AAT ACGCATGTAAAAGTCCCACTCCAATACACACCTGGGAT<br>AGTGGATTTTGGTGAAG**G**CAGTTGATTCCACCAACAAAAACC<br>ATATTGGGCATGATGGGCCTAGGGTAATCCTTCACA | 3977 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATCAACTGCCTTCACCA | 3978 |
| | TGGTGAAGGCAGTTGAT | 3979 |
| Crigler-Najjar syndrome 1<br>Ala292Val<br>GCC-GTC | ATCAAAGAATATGAGAAAAAATTAACTGAAAATTTTTCTTCTGG<br>CTCTAGGAATTTGAAGCCTACATTAATGCTTCTGGAGAACATG<br>GAATTGTGGTTTTCTCTTTGGGATCAATGGTCTC | 3980 |
| | GAGACCATTGATCCCAAAGAGAAAACCACAATTCCATGTTCTC<br>CAGAAGCATTAATGTAGGCTTCAAATTCCTAGAGCCAGAAGAA<br>AAATTTTCAGTTAATTTTTTCTCATATTCTTTGAT | 3981 |
| | ATTTGAAGCCTACATTA | 3982 |
| | TAATGTAGGCTTCAAAT | 3983 |
| Crigler-Najjar syndrome 1<br>Gly308Glu<br>GGA-GAA | AGGAATTTGAAGCCTACATTAATGCTTCTGGAGAACATGGAAT<br>TGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAG<br>AAGAAAGCTATGGCAATTGCTGATGCTTTGGGCAA | 3984 |
| | TTGCCCAAAGCATCAGCAATTGCCATAGCTTTCTTCTCTGGAA<br>TTTCTGAGACCATTGATCCCAAAGAGAAAACCACAATTCCATG<br>TTCTCCAGAAGCATTAATGTAGGCTTCAAATTCCT | 3985 |
| | CTCTTTGGGATCAATGG | 3986 |
| | CCATTGATCCCAAAGAG | 3987 |
| Crigler-Najjar syndrome 1<br>Gln331Term<br>CAG-TAG | GTCTCAGAAATTCCAGAGAAGAAAGCTATGGCAATTGCTGAT<br>GCTTTGGGCAAAATCCCTCAGACAGTAAGAAGATTCTATACCA<br>TGGCCTCATATCTATTTTCACAGGAGCGCTAATCCC | 3988 |
| | GGGATTAGCGCTCCTGTGAAAATAGATATGAGGCCATGGTAT<br>AGAATCTTCTTACTGTCTGAGGGATTTTGCCCAAAGCATCAGC<br>AATTGCCATAGCTTTCTTCTCTGGAATTTCTGAGAC | 3989 |
| | AAATCCCTCAGACAGTA | 3990 |
| | TACTGTCTGAGGGATTT | 3991 |
| Crigler-Najjar syndrome 1<br>Trp335Term<br>TGG-TGA | TCTAATCATATTATGTTCTTTCTTTACGTTCTGCTCTTTTTGCC<br>CCTCCCAGGTCCTGTGGCGGTACACTGGAACCCGACCATCG<br>AATCTTGCGAACAACACGATACTTGTTAAGTGGCTA | 3992 |
| | TAGCCACTTAACAAGTATCGTGTTGTTCGCAAGATTCGATGGT<br>CGGGTTCCAGTGTACCGCCACAGGACCTGGGAGGGGCAAAA<br>AGAGCAGAACGTAAAGAAAGAACATAATATGATTAGA | 3993 |
| | GTCCTGTGGCGGTACAC | 3994 |
| | GTGTACCGCCACAGGAC | 3995 |
| Crigler-Najjar syndrome 1<br>Gln357Arg<br>CAA-CGA | ACACTGGAACCCGACCATCGAATCTTGCGAACAACACGATAC<br>TTGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTATGTTGG<br>GCGGATTGGATGTATAGGTCAAACCAGGGTCAAATTA | 3996 |
| | TAATTTGACCCTGGTTTGACCTATACATCCAATCCGCCCAACA<br>TACCAAGCAGATCGTTTTGGGGTAGCCACTTAACAAGTATCGT<br>GTTGTTCGCAAGATTCGATGGTCGGGTTCCAGTGT | 3997 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GCTACCCCAAAACGATC | 3998 |
| | GATCGTTTTGGGGTAGC | 3999 |
| Crigler-Najjar syndrome 1<br>Gln357Term<br>CAA-TAA | TACACTGGAACCCGACCATCGAATCTTGCGAACAACACGATA<br>CTTGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTATGTTG<br>GGCGGATTGGATGTATAGGTCAAACCAGGGTCAAATT | 4000 |
| | AATTTGACCCTGGTTTGACCTATACATCCAATCCGCCCAACAT<br>ACCAAGCAGATCGTTTTGGGGTAGCCACTTAACAAGTATCGT<br>GTTGTTCGCAAGATTCGATGGTCGGGTTCCAGTGTA | 4001 |
| | GGCTACCCCAAAACGAT | 4002 |
| | ATCGTTTTGGGGTAGCC | 4003 |
| Gilbert syndrome<br>Arg367Gly<br>CGT-GGT | AACTCAGAGATGTAACTGCTGACATCCTCCCTATTTTGCATCT<br>CAGGTCACCCGATGACCCGTGCCTTTATCACCCATGCTGGTT<br>CCCATGGTGTTTATGAAAGCATATGCAATGGCGTTC | 4004 |
| | GAACGCCATTGCATATGCTTTCATAAACACCATGGGAACCAG<br>CATGGGTGATAAAGGCACGGGTCATCGGGTGACCTGAGATG<br>CAAAATAGGGAGGATGTCAGCAGTTACATCTCTGAGTT | 4005 |
| | CGATGACCCGTGCCTTT | 4006 |
| | AAAGGCACGGGTCATCG | 4007 |
| Crigler-Najjar syndrome 1<br>Ala368Thr<br>GCC-ACC | TCAGAGATGTAACTGCTGACATCCTCCCTATTTTGCATCTCAG<br>GTCACCCGATGACCCGTGCCTTTATCACCCATGCTGGTTCCC<br>ATGGTGTTTATGAAAGCATATGCAATGGCGTTCCCA | 4008 |
| | TGGGAACGCCATTGCATATGCTTTCATAAACACCATGGGAAC<br>CAGCATGGGTGATAAAGGCACGGGTCATCGGGTGACCTGAG<br>ATGCAAAATAGGGAGGATGTCAGCAGTTACATCTCTGA | 4009 |
| | TGACCCGTGCCTTTATC | 4010 |
| | GATAAAGGCACGGGTCA | 4011 |
| Crigler-Najjar syndrome 1<br>Ser375Phe<br>TCC-TTC | CCTCCCTATTTTGCATCTCAGGTCACCCGATGACCCGTGCCT<br>TTATCACCCATGCTGGTTCCCATGGTGTTTATGAAAGCATATG<br>CAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGG | 4012 |
| | CCAAACAAGGGCATCATCACCATGGGAACGCCATTGCATATG<br>CTTTCATAAACACCATGGGAACCAGCATGGGTGATAAAGGCA<br>CGGGTCATCGGGTGACCTGAGATGCAAAATAGGGAGG | 4013 |
| | TGCTGGTTCCCATGGTG | 4014 |
| | CACCATGGGAACCAGCA | 4015 |
| Crigler-Najjar syndrome 1<br>Ser381Arg<br>AGC-AGG | AGGTCACCCGATGACCCGTGCCTTTATCACCCATGCTGGTTC<br>CCATGGTGTTTATGAAAGCATATGCAATGGCGTTCCCATGGT<br>GATGATGCCCTTGTTTGGTGATCAGATGGACAATGCA | 4016 |
| | TGCATTGTCCATCTGATCACCAAACAAGGGCATCATCCCCAT<br>GGGAACGCCATTGCATATGCTTTCATAAACACCATGGGAACC<br>AGCATGGGTGATAAAGGCACGGGTCATCGGGTGACCT | 4017 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TATGAAAG**C**ATATGCAA | 4018 |
| | TTGCATAT**G**CTTTCATA | 4019 |
| Crigler-Najjar syndrome 1<br>Ala401Pro<br>GCA-CCA | AGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTT<br>GGTGATCAGATGGACAAT**G**CAAAGCGCATGGAGACTAAGGG<br>AGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTG | 4020 |
| | CAGAAGTCATTTCCAGAACATTCAGGGTCACTCCAGCTCCCT<br>TAGTCTCCATGCGCTTTG**C**ATTGTCCATCTGATCACCAAACAA<br>GGGCATCATCACCATGGGAACGCCATTGCATATGCT | 4021 |
| | TGGACAAT**G**CAAAGCGC | 4022 |
| | GCGCTTTG**C**ATTGTCCA | 4023 |
| Crigler-Najjar syndrome 1<br>Lys428Glu<br>AAA-GAA | GGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTGAA<br>GATTTAGAAAATGCTCTA**A**AAGCAGTCATCAATGACAAAAGGT<br>AAGAAAGAAGATACAGAAGAATACTTTGGTCATGGC | 4024 |
| | GCCATGACCAAAGTATTCTTCTGTATCTTCTTTCTTACCTTTTG<br>TCATTGATGACTGCTT**T**TAGAGCATTTTCTAAATCTTCAGAAGT<br>CATTTCCAGAACATTCAGGGTCACTCCAGCTCC | 4025 |
| | ATGCTCTA**A**AAGCAGTC | 4026 |
| | GACTGCTT**T**TAGAGCAT | 4027 |
| Crigler-Najjar syndrome 1<br>Tyr486Asp<br>TAC-GAC | ATGAGGCACAAGGGCGCGCCACACCTGCGCCCCGCAGCCC<br>ACGACCTCACCTGGTACCAG**T**ACCATTCCTTGGACGTGATTG<br>GTTTCCTCTTGGCCGTCGTGCTGACAGTGGCCTTCATCA | 4028 |
| | TGATGAAGGCCACTGTCAGCACGACGGCCAAGAGGAAACCA<br>ATCACGTCCAAGGAATGGT**A**CTGGTACCAGGTGAGGTCGTG<br>GGCTGCGGGGCGCAGGTGTGGCGCGCCCTTGTGCCTCAT | 4029 |
| | GGTACCAG**T**ACCATTCC | 4030 |
| | GGAATGGT**A**CTGGTACC | 4031 |
| Crigler-Najjar syndrome 1<br>Ser488Phe<br>TCC-TTC | ACAAGGGCGCGCCACACCTGCGCCCCGCAGCCCACGACCT<br>CACCTGGTACCAGTACCATT**C**CTTGGACGTGATTGGTTTCCT<br>CTTGGCCGTCGTGCTGACAGTGGCCTTCATCACCTTTAA | 4032 |
| | TTAAAGGTGATGAAGGCCACTGTCAGCACGACGGCCAAGAG<br>GAAACCAATCACGTCCAAG**G**AATGGTACTGGTACCAGGTGAG<br>GTCGTGGGCTGCGGGGCGCAGGTGTGGCGCGCCCTTGT | 4033 |
| | GTACCATT**C**CTTGGACG | 4034 |
| | CGTCCAAG**G**AATGGTAC | 4035 |

## EXAMPLE 23
## Alzheimer's Disease - Amyloid precursor protein (APP)

Over the past few decades Alzheimer's disease (AD), once considered a rare disorder, has become recognized as a major public health problem. Although there is no agreement on the exact prevalence of Alzheimer's disease, in part due to difficulties of diagnosis, studies consistently point to an exponential rise in prevalence of this disease with age. After age 65, the percentage of affected people approximately doubles with every decade of life, regardless of definition. Among people age 85 or older, studies suggest that 25 to 35 percent have dementia, including Alzheimer's disease; one study reports that 47.2 percent of people over age 85 have Alzheimer's disease, exclusive of other dementias.

Alzheimer's disease progressively destroys memory, reason, judgment, language, and, eventually, the ability to carry out even the simplest tasks. Anatomic changes associated with Alzheimer's disease begin in the entorhinal cortex, proceed to the hippocampus, and then gradually spread to other regions, particularly the cerebral cortex. Chief among such anatomic changes are the presence of characteristic extracellular plaques and internal neurofibrillary tangles.

At least four genes have been identified to date that contribute to development of Alzheimer's disease: AD1 is caused by mutations in the amyloid precursor gene (APP); AD2 is associated with a particular allele of APOE (see Example 20); AD3 is caused by mutation in a gene encoding a 7-transmembrane domain protein, presenilin-1 (PSEN1), and AD4 is caused by mutation in a gene that encodes a similar 7-transmembrane domain protein, presenilin-2 (PSEN2). The attached table discloses the correcting oligonucleotide base sequences for the APP oligonucleotides of the invention.

**Table 30**
**APP Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Alzheimer disease<br>Glu665Asp<br>GAG-GAC | CTGCATACTTTAATTATGATGTAATACAGGTTCTGGGTTGACA<br>AATATCAAGACGGAGGA**G**ATCTCTGAAGTGAAGATGGATGCA<br>GAATTCCGACATGACTCAGGATATGAAGTTCATCAT | 4036 |
| | ATGATGAACTTCATATCCTGAGTCATGTCGGAATTCTGCATCC<br>ATCTTCACTTCAGAGAT**C**TCCTCCGTCTTGATATTTGTCAACC<br>CAGAACCTGTATTACATCATAATTAAAGTATGCAG | 4037 |
| | ACGGAGGA**G**ATCTCTGA | 4038 |
| | TCAGAGAT**C**TCCTCCGT | 4039 |
| Alzheimer disease<br>Ala692Gly<br>GCA-GGA | ATTATATTGCATTTAGAAATTAAAATTCTTTTTCTTAATTTGTTTT<br>CAAGGTGTTCTTTG**C**AGAAGATGTGGGTTCAAACAAAGGTGC<br>AATCATTGGACTCATGGTGGGCGGTGTTGTCAT | 4040 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATGACAACACCGCCCACCATGAGTCCAATGATTGCACCTTTG TTTGAACCCACATCTTCTGCAAAGAACACCTTGAAAACAAATT AAGAAAAAGAATTTTAATTTCTAAATGCAATATAAT | 4041 |
| | GTTCTTTGCAGAAGATG | 4042 |
| | CATCTTCTGCAAAGAAC | 4043 |
| Alzheimer disease Glu693Gln GAA-CAA | TATATTGCATTTAGAAATTAAAATTCTTTTTCTTAATTTGTTTTC AAGGTGTTCTTTGCAGAAGATGTGGGTTCAAACAAAGGTGCA ATCATTGGACTCATGGTGGGCGGTGTTGTCATAG | 4044 |
| | CTATGACAACACCGCCCACCATGAGTCCAATGATTGCACCTT TGTTTGAACCCACATCTTCTGCAAAGAACACCTTGAAAACAAA TTAAGAAAAAGAATTTTAATTTCTAAATGCAATATA | 4045 |
| | TCTTTGCAGAAGATGTG | 4046 |
| | CACATCTTCTGCAAAGA | 4047 |
| Alzheimer disease Glu693Gly GAA-GGA | ATATTGCATTTAGAAATTAAAATTCTTTTTCTTAATTTGTTTTCA AGGTGTTCTTTGCAGAAGATGTGGGTTCAAACAAAGGTGCAA TCATTGGACTCATGGTGGGCGGTGTTGTCATAGC | 4048 |
| | GCTATGACAACACCGCCCACCATGAGTCCAATGATTGCACCT TTGTTTGAACCCACATCTTCTGCAAAGAACACCTTGAAAACAA ATTAAGAAAAAGAATTTTAATTTCTAAATGCAATAT | 4049 |
| | CTTTGCAGAAGATGTGG | 4050 |
| | CCACATCTTCTGCAAAG | 4051 |
| Alzheimer disease Ala713Thr GCG-ACG | GAAGATGTGGGTTCAAACAAAGGTGCAATCATTGGACTCATG GTGGGCGGTGTTGTCATAGCGACAGTGATCGTCATCACCTTG GTGATGCTGAAGAAGAAACAGTACACATCCATTCATC | 4052 |
| | GATGAATGGATGTGTACTGTTTCTTCTTCAGCATCACCAAGGT GATGACGATCACTGTCGCTATGACAACACCGCCCACCATGAG TCCAATGATTGCACCTTTGTTTGAACCCACATCTTC | 4053 |
| | TTGTCATAGCGACAGTG | 4054 |
| | CACTGTCGCTATGACAA | 4055 |
| Schizophrenia Ala713Val GCG-GTG | AAGATGTGGGTTCAAACAAAGGTGCAATCATTGGACTCATGG TGGGCGGTGTTGTCATAGCGACAGTGATCGTCATCACCTTGG TGATGCTGAAGAAGAAACAGTACACATCCATTCATCA | 4056 |
| | TGATGAATGGATGTGTACTGTTTCTTCTTCAGCATCACCAAGG TGATGACGATCACTGTCGCTATGACAACACCGCCCACCATGA GTCCAATGATTGCACCTTTGTTTGAACCCACATCTT | 4057 |
| | TGTCATAGCGACAGTGA | 4058 |
| | TCACTGTCGCTATGACA | 4059 |
| Alzheimer disease Val715Met GTG-ATG | GTGGGTTCAAACAAAGGTGCAATCATTGGACTCATGGTGGGC GGTGTTGTCATAGCGACAGTGATCGTCATCACCTTGGTGATG CTGAAGAAGAAACAGTACACATCCATTCATCATGGTG | 4060 |
| | CACCATGATGAATGGATGTGTACTGTTTCTTCTTCAGCATCAC CAAGGTGATGACGATCACTGTCGCTATGACAACACCGCCCAC CATGAGTCCAATGATTGCACCTTTGTTTGAACCCAC | 4061 |
| | TAGCGACAGTGATCGTC | 4062 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GACGATCACTGTCGCTA | 4063 |
| Alzheimer disease<br>Ile716Val<br>ATC-GTC | GGTTCAAACAAAGGTGCAATCATTGGACTCATGGTGGGCGGT<br>GTTGTCATAGCGACAGTGATCGTCATCACCTTGGTGATGCTG<br>AAGAAGAAACAGTACACATCCATTCATCATGGTGTGG | 4064 |
| | CCACACCATGATGAATGGATGTGTACTGTTTCTTCTTCAGCAT<br>CACCAAGGTGATGACGATCACTGTCGCTATGACAACACCGCC<br>CACCATGAGTCCAATGATTGCACCTTTGTTTGAACC | 4065 |
| | CGACAGTGATCGTCATC | 4066 |
| | GATGACGATCACTGTCG | 4067 |
| Alzheimer disease<br>Val717Gly<br>GTC-GGC | CAAACAAAGGTGCAATCATTGGACTCATGGTGGGCGGTGTTG<br>TCATAGCGACAGTGATCGTCATCACCTTGGTGATGCTGAAGA<br>AGAAACAGTACACATCCATTCATCATGGTGTGGTGGA | 4068 |
| | TCCACCACACCATGATGAATGGATGTGTACTGTTTCTTCTTCA<br>GCATCACCAAGGTGATGACGATCACTGTCGCTATGACAACAC<br>CGCCCACCATGAGTCCAATGATTGCACCTTTGTTTG | 4069 |
| | AGTGATCGTCATCACCT | 4070 |
| | AGGTGATGACGATCACT | 4071 |
| Alzheimer disease<br>Val717Ile<br>GTC-ATC | TCAAACAAAGGTGCAATCATTGGACTCATGGTGGGCGGTGTT<br>GTCATAGCGACAGTGATCGTCATCACCTTGGTGATGCTGAAG<br>AAGAAACAGTACACATCCATTCATCATGGTGTGGTGG | 4072 |
| | CCACCACACCATGATGAATGGATGTGTACTGTTTCTTCTTCAG<br>CATCACCAAGGTGATGACGATCACTGTCGCTATGACAACACC<br>GCCCACCATGAGTCCAATGATTGCACCTTTGTTTGA | 4073 |
| | CAGTGATCGTCATCACC | 4074 |
| | GGTGATGACGATCACTG | 4075 |
| Alzheimer disease<br>Val717Phe<br>GTC-TTC | TCAAACAAAGGTGCAATCATTGGACTCATGGTGGGCGGTGTT<br>GTCATAGCGACAGTGATCGTCATCACCTTGGTGATGCTGAAG<br>AAGAAACAGTACACATCCATTCATCATGGTGTGGTGG | 4076 |
| | CCACCACACCATGATGAATGGATGTGTACTGTTTCTTCTTCAG<br>CATCACCAAGGTGATGACGATCACTGTCGCTATGACAACACC<br>GCCCACCATGAGTCCAATGATTGCACCTTTGTTTGA | 4077 |
| | CAGTGATCGTCATCACC | 4078 |
| | GGTGATGACGATCACTG | 4079 |
| Alzheimer disease<br>Leu723Pro<br>CTG-CCG | TTGGACTCATGGTGGGCGGTGTTGTCATAGCGACAGTGATCG<br>TCATCACCTTGGTGATGCTGAAGAAGAAACAGTACACATCCAT<br>TCATCATGGTGTGGTGGAGGTAGGTAAACTTGACTG | 4080 |
| | CAGTCAAGTTTACCTACCTCCACCACACCATGATGAATGGAT<br>GTGTACTGTTTCTTCTTCAGCATCACCAAGGTGATGACGATCA<br>CTGTCGCTATGACAACACCGCCCACCATGAGTCCAA | 4081 |
| | GGTGATGCTGAAGAAGA | 4082 |
| | TCTTCTTCAGCATCACC | 4083 |

## EXAMPLE 24
## Alzheimer's Disease - presenilin-1 (PSEN1)

The attached table discloses the correcting oligonucleotide base sequences for the PSEN1 oligonucleotides of the invention.

**Table 31**
**PSEN1 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Alzheimer disease<br>Ala79Val<br>GCC-GTC | CCCGGCAGGTGGTGGAGCAAGATGAGGAAGAAGATGAGGAG<br>CTGACATTGAAATATGGCG**C**CAAGCATGTGATCATGCTCTTTG<br>TCCCTGTGACTCTCTGCATGGTGGTGGTCGTGGCTAC | 4084 |
| | GTAGCCACGACCACCACCATGCAGAGAGTCACAGGGACAAA<br>GAGCATGATCACATGCTTG**G**CGCCATATTTCAATGTCAGCTC<br>CTCATCTTCTTCCTCATCTTGCTCCACCACCTGCCGGG | 4085 |
| | ATATGGCG**C**CAAGCATG | 4086 |
| | CATGCTTG**G**CGCCATAT | 4087 |
| Alzheimer disease<br>Val82Leu<br>tGTG-CTG | GTGGTGGAGCAAGATGAGGAAGAAGATGAGGAGCTGACATT<br>GAAATATGGCGCCAAGCAT**G**TGATCATGCTCTTTGTCCCTGT<br>GACTCTCTGCATGGTGGTGGTCGTGGCTACCATTAAGT | 4088 |
| | ACTTAATGGTAGCCACGACCACCACCATGCAGAGAGTCACAG<br>GGACAAAGAGCATGATCA**C**ATGCTTGGCGCCATATTTCAATG<br>TCAGCTCCTCATCTTCTTCCTCATCTTGCTCCACCAC | 4089 |
| | CCAAGCAT**G**TGATCATG | 4090 |
| | CATGATCA**C**ATGCTTGG | 4091 |
| Alzheimer disease<br>Val96Phe<br>gGTC-TTC | AAATATGGCGCCAAGCATGTGATCATGCTCTTTGTCCCTGTG<br>ACTCTCTGCATGGTGGTG**G**TCGTGGCTACCATTAAGTCAGTC<br>AGCTTTTATACCCGGAAGGATGGGCAGCTGTACGTAT | 4092 |
| | ATACGTACAGCTGCCCATCCTTCCGGGTATAAAAGCTGACTG<br>ACTTAATGGTAGCCACGA**C**CACCACCATGCAGAGAGTCACAG<br>GGACAAAGAGCATGATCACATGCTTGGCGCCATATTT | 4093 |
| | TGGTGGTG**G**TCGTGGCT | 4094 |
| | AGCCACGA**C**CACCACCA | 4095 |
| Alzheimer disease<br>Phe105Leu<br>TTTt-TTG | CTTTGTCCCTGTGACTCTCTGCATGGTGGTGGTCGTGGCTAC<br>CATTAAGTCAGTCAGCTTT**T**TATACCCGGAAGGATGGGCAGCT<br>GTACGTATGAGTTTTGTTTTATTATTCTCAAAGCCAG | 4096 |
| | CTGGCTTTGAGAATAATAAAACAAAACTCATACGTACAGCTGC<br>CCATCCTTCCGGGTATA**A**AAGCTGACTGACTTAATGGTAGCC<br>ACGACCACCACCATGCAGAGAGTCACAGGGACAAAG | 4097 |
| | GTCAGCTTT**T**TATACCCG | 4098 |
| | CGGGTATA**A**AAGCTGAC | 4099 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Alzheimer disease<br>Thr116Asn<br>ACC-AAC | TGGTGATCTCCATTAACACTGACCTAGGGCTTTTGTGTTTGTT<br>TTATTGTAGAATCTATA**C**CCCATTCACAGAAGATACCGAGACT<br>GTGGGCCAGAGAGCCCTGCACTCAATTCTGAATGC | 4100 |
| | GCATTCAGAATTGAGTGCAGGGCTCTCTGGCCCACAGTCTCG<br>GTATCTTCTGTGAATGGG**G**TATAGATTCTACAATAAAACAAAC<br>ACAAAAGCCCTAGGTCAGTGTTAATGGAGATCACCA | 4101 |
| | AATCTATA**C**CCCATTCA | 4102 |
| | TGAATGGG**G**TATAGATT | 4103 |
| Alzheimer disease<br>Pro117Leu<br>CCA-CTA | TGATCTCCATTAACACTGACCTAGGGCTTTTGTGTTTGTTTTAT<br>TGTAGAATCTATACCC**C**ATTCACAGAAGATACCGAGACTGTG<br>GGCCAGAGAGCCCTGCACTCAATTCTGAATGCTGC | 4104 |
| | GCAGCATTCAGAATTGAGTGCAGGGCTCTCTGGCCCACAGTC<br>TCGGTATCTTCTGTGAAT**G**GGGTATAGATTCTACAATAAAACA<br>AACACAAAAGCCCTAGGTCAGTGTTAATGGAGATCA | 4105 |
| | CTATACCC**C**ATTCACAG | 4106 |
| | CTGTGAAT**G**GGGTATAG | 4107 |
| Alzheimer disease<br>Glu120Asp<br>GAAg-GAT | TAACACTGACCTAGGGCTTTTGTGTTTGTTTTATTGTAGAATCT<br>ATACCCCATTCACAGA**A**GATACCGAGACTGTGGGCCAGAGAG<br>CCCTGCACTCAATTCTGAATGCTGCCATCATGATC | 4108 |
| | GATCATGATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCTG<br>GCCCACAGTCTCGGTATC**T**TCTGTGAATGGGGTATAGATTCT<br>ACAATAAAACAAACACAAAAGCCCTAGGTCAGTGTTA | 4109 |
| | TTCACAGA**A**GATACCGA | 4110 |
| | TCGGTATC**T**TCTGTGAA | 4111 |
| Alzheimer disease<br>Glu120Asp<br>GAAg-GAC | TAACACTGACCTAGGGCTTTTGTGTTTGTTTTATTGTAGAATCT<br>ATACCCCATTCACAGA**A**GATACCGAGACTGTGGGCCAGAGAG<br>CCCTGCACTCAATTCTGAATGCTGCCATCATGATC | 4112 |
| | GATCATGATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCTG<br>GCCCACAGTCTCGGTATC**T**TCTGTGAATGGGGTATAGATTCT<br>ACAATAAAACAAACACAAAAGCCCTAGGTCAGTGTTA | 4113 |
| | TTCACAGA**A**GATACCGA | 4114 |
| | TCGGTATC**T**TCTGTGAA | 4115 |
| Alzheimer disease<br>Glu120Lys<br>aGAA-AAA | ATTAACACTGACCTAGGGCTTTTGTGTTTGTTTTATTGTAGAAT<br>CTATACCCCATTCACA**G**AAGATACCGAGACTGTGGGCCAGAG<br>AGCCCTGCACTCAATTCTGAATGCTGCCATCATGA | 4116 |
| | TCATGATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCTGGC<br>CCACAGTCTCGGTATCTT**C**TGTGAATGGGGTATAGATTCTACA<br>ATAAAACAAACACAAAAGCCCTAGGTCAGTGTTAAT | 4117 |
| | CATTCACA**G**AAGATACC | 4118 |
| | GGTATCTT**C**TGTGAATG | 4119 |
| Alzheimer disease<br>Glu123Lys<br>cGAG-AAG | GACCTAGGGCTTTTGTGTTTGTTTTATTGTAGAATCTATACCC<br>CATTCACAGAAGATACC**G**AGACTGTGGGCCAGAGAGCCCTG<br>CACTCAATTCTGAATGCTGCCATCATGATCAGTGTCA | 4120 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGACACTGATCATGATGGCAGCATTCAGAATTGAGTGCAGGG CTCTCTGGCCCACAGTCTCGGTATCTTCTGTGAATGGGGTAT AGATTCTACAATAAAACAAACACAAAAGCCCTAGGTC | 4121 |
| | AAGATACCGAGACTGTG | 4122 |
| | CACAGTCTCGGTATCTT | 4123 |
| Alzheimer disease Asn135Asp gAAT-GAT | TATACCCCATTCACAGAAGATACCGAGACTGTGGGCCAGAGA GCCCTGCACTCAATTCTGAAATGCTGCCATCATGATCAGTGTC ATTGTTGTCATGACTATCCTCCTGGTGGTTCTGTATA | 4124 |
| | TATACAGAACCACCAGGAGGATAGTCATGACAACAATGACAC TGATCATGATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCT GGCCCACAGTCTCGGTATCTTCTGTGAATGGGGTATA | 4125 |
| | CAATTCTGAAATGCTGCC | 4126 |
| | GGCAGCATTCAGAATTG | 4127 |
| Alzheimer disease Met139Ile ATGa-ATA | AGAAGATACCGAGACTGTGGGCCAGAGAGCCCTGCACTCAA TTCTGAATGCTGCCATCATGATCAGTGTCATTGTTGTCATGAC TATCCTCCTGGTGGTTCTGTATAAATACAGGTGCTAT | 4128 |
| | ATAGCACCTGTATTTATACAGAACCACCAGGAGGATAGTCATG ACAACAATGACACTGATCATGATGGCAGCATTCAGAATTGAGT GCAGGGCTCTCTGGCCCACAGTCTCGGTATCTTCT | 4129 |
| | GCCATCATGATCAGTGT | 4130 |
| | ACACTGATCATGATGGC | 4131 |
| Alzheimer disease Met139Lys ATG-AAG | CAGAAGATACCGAGACTGTGGGCCAGAGAGCCCTGCACTCA ATTCTGAATGCTGCCATCATGATCAGTGTCATTGTTGTCATGA CTATCCTCCTGGTGGTTCTGTATAAATACAGGTGCTA | 4132 |
| | TAGCACCTGTATTTATACAGAACCACCAGGAGGATAGTCATGA CAACAATGACACTGATCATGATGGCAGCATTCAGAATTGAGT GCAGGGCTCTCTGGCCCACAGTCTCGGTATCTTCTG | 4133 |
| | TGCCATCATGATCAGTG | 4134 |
| | CACTGATCATGATGGCA | 4135 |
| Alzheimer disease Met139Thr ATG-ACG | CAGAAGATACCGAGACTGTGGGCCAGAGAGCCCTGCACTCA ATTCTGAATGCTGCCATCATGATCAGTGTCATTGTTGTCATGA CTATCCTCCTGGTGGTTCTGTATAAATACAGGTGCTA | 4136 |
| | TAGCACCTGTATTTATACAGAACCACCAGGAGGATAGTCATGA CAACAATGACACTGATCATGATGGCAGCATTCAGAATTGAGT GCAGGGCTCTCTGGCCCACAGTCTCGGTATCTTCTG | 4137 |
| | TGCCATCATGATCAGTG | 4138 |
| | CACTGATCATGATGGCA | 4139 |
| Alzheimer disease Met139Val cATG-GTG | ACAGAAGATACCGAGACTGTGGGCCAGAGAGCCCTGCACTC AATTCTGAATGCTGCCATCATGATCAGTGTCATTGTTGTCATG ACTATCCTCCTGGTGGTTCTGTATAAATACAGGTGCT | 4140 |
| | AGCACCTGTATTTATACAGAACCACCAGGAGGATAGTCATGA CAACAATGACACTGATCATGATGGCAGCATTCAGAATTGAGT GCAGGGCTCTCTGGCCCACAGTCTCGGTATCTTCTGT | 4141 |
| | CTGCCATCATGATCAGT | 4142 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACTGATCATGATGGCAG | 4143 |
| Alzheimer disease<br>Ile143Phe<br>cATT-TTT | GAGACTGTGGGCCAGAGAGCCCTGCACTCAATTCTGAATGCT<br>GCCATCATGATCAGTGTCATTGTTGTCATGACTATCCTCCTGG<br>TGGTTCTGTATAAATACAGGTGCTATAAGGTGAGCA | 4144 |
| | TGCTCACCTTATAGCACCTGTATTTATACAGAACCACCAGGAG<br>GATAGTCATGACAACAATGACACTGATCATGATGGCAGCATTC<br>AGAATTGAGTGCAGGGCTCTCTGGCCCACAGTCTC | 4145 |
| | TCAGTGTCATTGTTGTC | 4146 |
| | GACAACAATGACACTGA | 4147 |
| Alzheimer disease<br>Ile143Thr<br>ATT-ACT | AGACTGTGGGCCAGAGAGCCCTGCACTCAATTCTGAATGCTG<br>CCATCATGATCAGTGTCATTGTTGTCATGACTATCCTCCTGGT<br>GGTTCTGTATAAATACAGGTGCTATAAGGTGAGCAT | 4148 |
| | ATGCTCACCTTATAGCACCTGTATTTATACAGAACCACCAGGA<br>GGATAGTCATGACAACAATGACACTGATCATGATGGCAGCAT<br>TCAGAATTGAGTGCAGGGCTCTCTGGCCCACAGTCT | 4149 |
| | CAGTGTCATTGTTGTCA | 4150 |
| | TGACAACAATGACACTG | 4151 |
| Alzheimer disease<br>Met146Ile<br>ATGa-ATA | CCAGAGAGCCCTGCACTCAATTCTGAATGCTGCCATCATGAT<br>CAGTGTCATTGTTGTCATGACTATCCTCCTGGTGGTTCTGTAT<br>AAATACAGGTGCTATAAGGTGAGCATGAGACACAGA | 4152 |
| | TCTGTGTCTCATGCTCACCTTATAGCACCTGTATTTATACAGA<br>ACCACCAGGAGGATAGTCATGACAACAATGACACTGATCATG<br>ATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCTGG | 4153 |
| | GTTGTCATGACTATCCT | 4154 |
| | AGGATAGTCATGACAAC | 4155 |
| Alzheimer disease<br>Met146Ile<br>ATGa-ATC | CCAGAGAGCCCTGCACTCAATTCTGAATGCTGCCATCATGAT<br>CAGTGTCATTGTTGTCATGACTATCCTCCTGGTGGTTCTGTAT<br>AAATACAGGTGCTATAAGGTGAGCATGAGACACAGA | 4156 |
| | TCTGTGTCTCATGCTCACCTTATAGCACCTGTATTTATACAGA<br>ACCACCAGGAGGATAGTCATGACAACAATGACACTGATCATG<br>ATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCTGG | 4157 |
| | GTTGTCATGACTATCCT | 4158 |
| | AGGATAGTCATGACAAC | 4159 |
| Alzheimer disease<br>Met146Leu<br>cATG-TTG | GGCCAGAGAGCCCTGCACTCAATTCTGAATGCTGCCATCATG<br>ATCAGTGTCATTGTTGTCATGACTATCCTCCTGGTGGTTCTGT<br>ATAAATACAGGTGCTATAAGGTGAGCATGAGACACA | 4160 |
| | TGTGTCTCATGCTCACCTTATAGCACCTGTATTTATACAGAAC<br>CACCAGGAGGATAGTCATGACAACAATGACACTGATCATGAT<br>GGCAGCATTCAGAATTGAGTGCAGGGCTCTCTGGCC | 4161 |
| | TTGTTGTCATGACTATC | 4162 |
| | GATAGTCATGACAACAA | 4163 |
| Alzheimer disease<br>Met146Val<br>cATG-GTG | GGCCAGAGAGCCCTGCACTCAATTCTGAATGCTGCCATCATG<br>ATCAGTGTCATTGTTGTCATGACTATCCTCCTGGTGGTTCTGT<br>ATAAATACAGGTGCTATAAGGTGAGCATGAGACACA | 4164 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGTGTCTCATGCTCACCTTATAGCACCTGTATTTATACAGAAC CACCAGGAGGATAGTCATGACAACAATGACACTGATCATGAT GGCAGCATTCAGAATTGAGTGCAGGGCTCTCTGGCC | 4165 |
| | TTGTTGTCATGACTATC | 4166 |
| | GATAGTCATGACAACAA | 4167 |
| Alzheimer disease Thr147Ile ACT-ATT | AGAGAGCCCTGCACTCAATTCTGAATGCTGCCATCATGATCA GTGTCATTGTTGTCATGACTATCCTCCTGGTGGTTCTGTATAA ATACAGGTGCTATAAGGTGAGCATGAGACACAGATC | 4168 |
| | GATCTGTGTCTCATGCTCACCTTATAGCACCTGTATTTATACA GAACCACCAGGAGGATAGTCATGACAACAATGACACTGATCA TGATGGCAGCATTCAGAATTGAGTGCAGGGCTCTCT | 4169 |
| | TGTCATGACTATCCTCC | 4170 |
| | GGAGGATAGTCATGACA | 4171 |
| Alzheimer disease His163Arg CAT-CGT | CTTTTTAAGGGTTGTGGGACCTGTTAATTATATTGAAATGCTTT CTTTTCTAGGTCATCCATGCCTGGCTTATTATATCATCTCTATT GTTGCTGTTCTTTTTTTCATTCATTTACTTGGG | 4172 |
| | CCCAAGTAAATGAATGAAAAAAAGAACAGCAACAATAGAGATG ATATAATAAGCCAGGCATGGATGACCTAGAAAAGAAAGCATTT CAATATAATTAACAGGTCCCACAACCCTTAAAAAG | 4173 |
| | GGTCATCCATGCCTGGC | 4174 |
| | GCCAGGCATGGATGACC | 4175 |
| Alzheimer disease His163Tyr cCAT-TAT | ACTTTTTAAGGGTTGTGGGACCTGTTAATTATATTGAAATGCTT TCTTTTCTAGGTCATCCATGCCTGGCTTATTATATCATCTCTAT TGTTGCTGTTCTTTTTTTCATTCATTTACTTGG | 4176 |
| | CCAAGTAAATGAATGAAAAAAAGAACAGCAACAATAGAGATGA TATAATAAGCCAGGCATGGATGACCTAGAAAAGAAAGCATTTC AATATAATTAACAGGTCCCACAACCCTTAAAAAGT | 4177 |
| | AGGTCATCCATGCCTGG | 4178 |
| | CCAGGCATGGATGACCT | 4179 |
| Alzheimer disease Trp165Cys TGGc-TGC | AGGGTTGTGGGACCTGTTAATTATATTGAAATGCTTTCTTTTCT AGGTCATCCATGCCTGGCTTATTATATCATCTCTATTGTTGCT GTTCTTTTTTTCATTCATTTACTTGGGGTAAGTT | 4180 |
| | AACTTACCCCAAGTAAATGAATGAAAAAAAGAACAGCAACAAT AGAGATGATATAATAAGCCAGGCATGGATGACCTAGAAAAGA AAGCATTTCAATATAATTAACAGGTCCCACAACCCT | 4181 |
| | CATGCCTGGCTTATTAT | 4182 |
| | ATAATAAGCCAGGCATG | 4183 |
| Alzheimer disease Ser169Leu TCA-TTA | ACCTGTTAATTATATTGAAATGCTTTCTTTTCTAGGTCATCCAT GCCTGGCTTATTATATCATCTCTATTGTTGCTGTTCTTTTTTTC ATTCATTTACTTGGGGTAAGTTGTGAAATTTTT | 4184 |
| | AAAAATTTCACAACTTACCCCAAGTAAATGAATGAAAAAAAGAA CAGCAACAATAGAGATGATAAATAAGCCAGGCATGGATGAC CTAGAAAAGAAAGCATTTCAATATAATTAACAGGT | 4185 |
| | TATTATATCATCTCTAT | 4186 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ATAGAGATGATATAATA | 4187 |
| Alzheimer disease<br>Leu171Pro<br>CTA-CCA | TAATTATATTGAAATGCTTTCTTTTCTAGGTCATCCATGCCTGG<br>CTTATTATATCATCTCTATTGTTGCTGTTCTTTTTTTCATTCATT<br>TACTTGGGGTAAGTTGTGAAATTTTTGGTCTG | 4188 |
| | CAGACCAAAAATTTCACAACTTACCCCAAGTAAATGAATGAAA<br>AAAAGAACAGCAACAATAGAGATGATATAATAAGCCAGGCAT<br>GGATGACCTAGAAAAGAAAGCATTTCAATATAATTA | 4189 |
| | ATCATCTCTATTGTTGC | 4190 |
| | GCAACAATAGAGATGAT | 4191 |
| Alzheimer disease<br>Leu173Trp<br>TTG-TGG | TATTGAAATGCTTTCTTTTCTAGGTCATCCATGCCTGGCTTATT<br>ATATCATCTCTATTGTTGCTGTTCTTTTTTTCATTCATTTACTTG<br>GGGTAAGTTGTGAAATTTTTGGTCTGTCTTTC | 4192 |
| | GAAAGACAGACCAAAAATTTCACAACTTACCCCAAGTAAATGA<br>ATGAAAAAAAGAACAGCAACAATAGAGATGATATAATAAGCCA<br>GGCATGGATGACCTAGAAAAGAAAGCATTTCAATA | 4193 |
| | TCTATTGTTGCTGTTCT | 4194 |
| | AGAACAGCAACAATAGA | 4195 |
| Alzheimer disease<br>Gly209Arg<br>gGGA-AGA | TATAACGTTGCTGTGGACTACATTACTGTTGCACTCCTGATCT<br>GGAATTTTGGTGTGGTGGGAATGATTTCCATTCACTGGAAAG<br>GTCCACTTCGACTCCAGCAGGCATATCTCATTATGA | 4196 |
| | TCATAATGAGATATGCCTGCTGGAGTCGAAGTGGACCTTTCC<br>AGTGAATGGAAATCATTCCCACCACACCAAAATTCCAGATCAG<br>GAGTGCAACAGTAATGTAGTCCACAGCAACGTTATA | 4197 |
| | GTGTGGTGGGAATGATT | 4198 |
| | AATCATTCCCACCACAC | 4199 |
| Alzheimer disease<br>Gly209Val<br>GGA-GTA | ATAACGTTGCTGTGGACTACATTACTGTTGCACTCCTGATCTG<br>GAATTTTGGTGTGGTGGGAATGATTTCCATTCACTGGAAAGGT<br>CCACTTCGACTCCAGCAGGCATATCTCATTATGAT | 4200 |
| | ATCATAATGAGATATGCCTGCTGGAGTCGAAGTGGACCTTTC<br>CAGTGAATGGAAATCATTCCCACCACACCAAAATTCCAGATCA<br>GGAGTGCAACAGTAATGTAGTCCACAGCAACGTTAT | 4201 |
| | TGTGGTGGGAATGATTT | 4202 |
| | AAATCATTCCCACCACA | 4203 |
| Alzheimer disease<br>Ile213Thr<br>ATT-ACT | TGGACTACATTACTGTTGCACTCCTGATCTGGAATTTTGGTGT<br>GGTGGGAATGATTTCCATTCACTGGAAAGGTCCACTTCGACT<br>CCAGCAGGCATATCTCATTATGATTAGTGCCCTCAT | 4204 |
| | ATGAGGGCACTAATCATAATGAGATATGCCTGCTGGAGTCGA<br>AGTGGACCTTTCCAGTGAATGGAAATCATTCCCACCACACCA<br>AAATTCCAGATCAGGAGTGCAACAGTAATGTAGTCCA | 4205 |
| | GATTTCCATTCACTGGA | 4206 |
| | TCCAGTGAATGGAAATC | 4207 |
| Alzheimer disease<br>Leu219Pro<br>CTT-CCT | CACTCCTGATCTGGAATTTTGGTGTGGTGGGAATGATTTCCAT<br>TCACTGGAAAGGTCCACTTCGACTCCAGCAGGCATATCTCAT<br>TATGATTAGTGCCCTCATGGCCCTGGTGTTTATCAA | 4208 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TTGATAAACACCAGGGCCATGAGGGCACTAATCATAATGAGA TATGCCTGCTGGAGTCGAAGTGGACCTTTCCAGTGAATGGAA ATCATTCCCACCACACCAAAATTCCAGATCAGGAGTG | 4209 |
| | AGGTCCACTTCGACTCC | 4210 |
| | GGAGTCGAAGTGGACCT | 4211 |
| Alzheimer disease Ala231Thr tGCC-ACC | ATTTCCATTCACTGGAAAGGTCCACTTCGACTCCAGCAGGCA TATCTCATTATGATTAGTGCCCTCATGGCCCTGGTGTTTATCA AGTACCTCCCTGAATGGACTGCGTGGCTCATCTTGG | 4212 |
| | CCAAGATGAGCCACGCAGTCCATTCAGGGAGGTACTTGATAA ACACCAGGGCCATGAGGGCACTAATCATAATGAGATATGCCT GCTGGAGTCGAAGTGGACCTTTCCAGTGAATGGAAAT | 4213 |
| | TGATTAGTGCCCTCATG | 4214 |
| | CATGAGGGCACTAATCA | 4215 |
| Alzheimer disease Ala231Val GCC-GTC | TTTCCATTCACTGGAAAGGTCCACTTCGACTCCAGCAGGCAT ATCTCATTATGATTAGTGCCCTCATGGCCCTGGTGTTTATCAA GTACCTCCCTGAATGGACTGCGTGGCTCATCTTGGC | 4216 |
| | GCCAAGATGAGCCACGCAGTCCATTCAGGGAGGTACTTGATA AACACCAGGGCCATGAGGGCACTAATCATAATGAGATATGCC TGCTGGAGTCGAAGTGGACCTTTCCAGTGAATGGAAA | 4217 |
| | GATTAGTGCCCTCATGG | 4218 |
| | CCATGAGGGCACTAATC | 4219 |
| Alzheimer disease Met233Thr ATG-ACG | TTCACTGGAAAGGTCCACTTCGACTCCAGCAGGCATATCTCA TTATGATTAGTGCCCTCATGGCCCTGGTGTTTATCAAGTACCT CCCTGAATGGACTGCGTGGCTCATCTTGGCTGTGAT | 4220 |
| | ATCACAGCCAAGATGAGCCACGCAGTCCATTCAGGGAGGTAC TTGATAAACACCAGGGCCATGAGGGCACTAATCATAATGAGA TATGCCTGCTGGAGTCGAAGTGGACCTTTCCAGTGAA | 4221 |
| | TGCCCTCATGGCCCTGG | 4222 |
| | CCAGGGCCATGAGGGCA | 4223 |
| Alzheimer disease Leu235Pro CTG-CCG | GGAAAGGTCCACTTCGACTCCAGCAGGCATATCTCATTATGA TTAGTGCCCTCATGGCCCTGGTGTTTATCAAGTACCTCCCTG AATGGACTGCGTGGCTCATCTTGGCTGTGATTTCAGT | 4224 |
| | ACTGAAATCACAGCCAAGATGAGCCACGCAGTCCATTCAGGG AGGTACTTGATAAACACCAGGGCCATGAGGGCACTAATCATA ATGAGATATGCCTGCTGGAGTCGAAGTGGACCTTTCC | 4225 |
| | CATGGCCCTGGTGTTTA | 4226 |
| | TAAACACCAGGGCCATG | 4227 |
| Alzheimer disease Ala246Glu GCG-GAG | TCATTATGATTAGTGCCCTCATGGCCCTGGTGTTTATCAAGTA CCTCCCTGAATGGACTGCGTGGCTCATCTTGGCTGTGATTTC AGTATATGGTAAAACCCAAGACTGATAATTTGTTTG | 4228 |
| | CAAACAAATTATCAGTCTTGGGTTTTACCATATACTGAAATCAC AGCCAAGATGAGCCACGCAGTCCATTCAGGGAGGTACTTGAT AAACACCAGGGCCATGAGGGCACTAATCATAATGA | 4229 |
| | ATGGACTGCGTGGCTCA | 4230 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | TGAGCCACGCAGTCCAT | 4231 |
| Alzheimer disease<br>Leu250Ser<br>TTG-TCG | GTGCCCTCATGGCCCTGGTGTTTATCAAGTACCTCCCTGAAT<br>GGACTGCGTGGCTCATCTTGGCTGTGATTTCAGTATATGGTA<br>AAACCCAAGACTGATAATTTGTTTGTCACAGGAATGC | 4232 |
| | GCATTCCTGTGACAAACAAATTATCAGTCTTGGGTTTTACCAT<br>ATACTGAAATCACAGCCAAGATGAGCCACGCAGTCCATTCAG<br>GGAGGTACTTGATAAACACCAGGGCCATGAGGGCAC | 4233 |
| | GCTCATCTTGGCTGTGA | 4234 |
| | TCACAGCCAAGATGAGC | 4235 |
| Alzheimer disease<br>Ala260Val<br>GCT-GTT | AGTTTAGCCCATACATTTTATTAGATGTCTTTTATGTTTTTCTTT<br>TTCTAGATTTAGTGGCTGTTTTGTGTCCGAAAGGTCCACTTCG<br>TATGCTGGTTGAAACAGCTCAGGAGAGAAATGA | 4236 |
| | TCATTTCTCTCCTGAGCTGTTTCAACCAGCATACGAAGTGGAC<br>CTTTCGGACACAAAACAGCCACTAAATCTAGAAAAAGAAAAAC<br>ATAAAAGACATCTAATAAAATGTATGGGCTAAACT | 4237 |
| | TTTAGTGGCTGTTTTGT | 4238 |
| | ACAAAACAGCCACTAAA | 4239 |
| Alzheimer disease<br>Leu262Phe<br>TTGt-TTC | CCCATACATTTTATTAGATGTCTTTTATGTTTTTCTTTTTCTAGA<br>TTTAGTGGCTGTTTTGTGTCCGAAAGGTCCACTTCGTATGCTG<br>GTTGAAACAGCTCAGGAGAGAAATGAAACGCTT | 4240 |
| | AAGCGTTTCATTTCTCTCCTGAGCTGTTTCAACCAGCATACGA<br>AGTGGACCTTTCGGACACAAAACAGCCACTAAATCTAGAAAAA<br>GAAAAACATAAAAGACATCTAATAAAATGTATGGG | 4241 |
| | GCTGTTTTGTGTCCGAA | 4242 |
| | TTCGGACACAAAACAGC | 4243 |
| Alzheimer disease<br>Cys263Arg<br>gTGT-CGT | CCATACATTTTATTAGATGTCTTTTATGTTTTTCTTTTTCTAGAT<br>TTAGTGGCTGTTTTGTGTCCGAAAGGTCCACTTCGTATGCTG<br>GTTGAAACAGCTCAGGAGAGAAATGAAACGCTTT | 4244 |
| | AAAGCGTTTCATTTCTCTCCTGAGCTGTTTCAACCAGCATACG<br>AAGTGGACCTTTCGGACACAAAACAGCCACTAAATCTAGAAA<br>AAGAAAAACATAAAAGACATCTAATAAAATGTATGG | 4245 |
| | CTGTTTTGTGTCCGAAA | 4246 |
| | TTTCGGACACAAAACAG | 4247 |
| Alzheimer disease<br>Pro264Leu<br>CCG-CTG | ACATTTTATTAGATGTCTTTTATGTTTTTCTTTTTCTAGATTTAG<br>TGGCTGTTTTGTGTCCGAAAGGTCCACTTCGTATGCTGGTTG<br>AAACAGCTCAGGAGAGAAATGAAACGCTTTTTCC | 4248 |
| | GGAAAAAGCGTTTCATTTCTCTCCTGAGCTGTTTCAACCAGCA<br>TACGAAGTGGACCTTTCGGACACAAAACAGCCACTAAATCTA<br>GAAAAAGAAAAACATAAAAGACATCTAATAAAATGT | 4249 |
| | TTTGTGTCCGAAAGGTC | 4250 |
| | GACCTTTCGGACACAAA | 4251 |
| Alzheimer disease<br>Arg269Gly<br>tCGT-GGT | GTCTTTTATGTTTTTCTTTTTCTAGATTTAGTGGCTGTTTTGTG<br>TCCGAAAGGTCCACTTCGTATGCTGGTTGAAACAGCTCAGGA<br>GAGAAATGAAACGCTTTTTCCAGCTCTCATTTACT | 4252 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | AGTAAATGAGAGCTGGAAAAAGCGTTTCATTTCTCTCCTGAGC<br>TGTTTCAACCAGCATACGAAGTGGACCTTTCGGACACAAAAC<br>AGCCACTAAATCTAGAAAAAGAAAAACATAAAAGAC | 4253 |
| | GTCCACTTCGTATGCTG | 4254 |
| | CAGCATACGAAGTGGAC | 4255 |
| Alzheimer disease<br>Arg269His<br>CGT-CAT | TCTTTTATGTTTTTCTTTTTCTAGATTTAGTGGCTGTTTTGTGTC<br>CGAAAGGTCCACTTCGTATGCTGGTTGAAACAGCTCAGGAGA<br>GAAATGAAACGCTTTTTCCAGCTCTCATTTACTC | 4256 |
| | GAGTAAATGAGAGCTGGAAAAAGCGTTTCATTTCTCTCCTGAG<br>CTGTTTCAACCAGCATACGAAGTGGACCTTTCGGACACAAAA<br>CAGCCACTAAATCTAGAAAAAGAAAAACATAAAAGA | 4257 |
| | TCCACTTCGTATGCTGG | 4258 |
| | CCAGCATACGAAGTGGA | 4259 |
| Alzheimer disease<br>Arg278Thr<br>AGA-ACA | TAGTGGCTGTTTTGTGTCCGAAAGGTCCACTTCGTATGCTGG<br>TTGAAACAGCTCAGGAGAGAAATGAAACGCTTTTTCCAGCTCT<br>CATTTACTCCTGTAAGTATTTGAGAATGATATTGAA | 4260 |
| | TTCAATATCATTCTCAAATACTTACAGGAGTAAATGAGAGCTG<br>GAAAAAGCGTTTCATTTCTCTCCTGAGCTGTTTCAACCAGCAT<br>ACGAAGTGGACCTTTCGGACACAAAACAGCCACTA | 4261 |
| | TCAGGAGAGAAATGAAA | 4262 |
| | TTTCATTTCTCTCCTGA | 4263 |
| Alzheimer disease<br>Glu280Ala<br>GAA-GCA | CTGTTTTGTGTCCGAAAGGTCCACTTCGTATGCTGGTTGAAAC<br>AGCTCAGGAGAGAAATGAAACGCTTTTTCCAGCTCTCATTTAC<br>TCCTGTAAGTATTTGAGAATGATATTGAATTAGTA | 4264 |
| | TACTAATTCAATATCATTCTCAAATACTTACAGGAGTAAATGAG<br>AGCTGGAAAAAGCGTTTCATTTCTCTCCTGAGCTGTTTCAACC<br>AGCATACGAAGTGGACCTTTCGGACACAAAACAG | 4265 |
| | GAGAAATGAAACGCTTT | 4266 |
| | AAAGCGTTTCATTTCTC | 4267 |
| Alzheimer disease<br>Glu280Gly<br>GAA-GGA | CTGTTTTGTGTCCGAAAGGTCCACTTCGTATGCTGGTTGAAAC<br>AGCTCAGGAGAGAAATGAAACGCTTTTTCCAGCTCTCATTTAC<br>TCCTGTAAGTATTTGAGAATGATATTGAATTAGTA | 4268 |
| | TACTAATTCAATATCATTCTCAAATACTTACAGGAGTAAATGAG<br>AGCTGGAAAAAGCGTTTCATTTCTCTCCTGAGCTGTTTCAACC<br>AGCATACGAAGTGGACCTTTCGGACACAAAACAG | 4269 |
| | GAGAAATGAAACGCTTT | 4270 |
| | AAAGCGTTTCATTTCTC | 4271 |
| Alzheimer disease<br>Leu282Arg<br>CTT-CGT | TGTGTCCGAAAGGTCCACTTCGTATGCTGGTTGAAACAGCTC<br>AGGAGAGAAATGAAACGCTTTTTCCAGCTCTCATTTACTCCTG<br>TAAGTATTTGAGAATGATATTGAATTAGTAATCAGT | 4272 |
| | ACTGATTACTAATTCAATATCATTCTCAAATACTTACAGGAGTA<br>AATGAGAGCTGGAAAAAGCGTTTCATTTCTCTCCTGAGCTGTT<br>TCAACCAGCATACGAAGTGGACCTTTCGGACACA | 4273 |
| | TGAAACGCTTTTTCCAG | 4274 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | CTGGAAAA**A**GCGTTTCA | 4275 |
| Alzheimer disease<br>Ala285Val<br>GCT-GTT | AAGGTCCACTTCGTATGCTGGTTGAAACAGCTCAGGAGAGAA<br>ATGAAACGCTTTTTCCAG**C**TCTCATTTACTCCTGTAAGTATTTG<br>AGAATGATATTGAATTAGTAATCAGTGTAGAATTT | 4276 |
| | AAATTCTACACTGATTACTAATTCAATATCATTCTCAAATACTTA<br>CAGGAGTAAATGAGA**G**CTGGAAAAAGCGTTTCATTTCTCTCCT<br>GAGCTGTTTCAACCAGCATACGAAGTGGACCTT | 4277 |
| | TTTTCCAG**C**TCTCATTT | 4278 |
| | AAATGAGA**G**CTGGAAAA | 4279 |
| Alzheimer disease<br>Leu286Val<br>tCTC-GTC | GGTCCACTTCGTATGCTGGTTGAAACAGCTCAGGAGAGAAAT<br>GAAACGCTTTTTCCAGCT**C**TCATTTACTCCTGTAAGTATTTGA<br>GAATGATATTGAATTAGTAATCAGTGTAGAATTTAT | 4280 |
| | ATAAATTCTACACTGATTACTAATTCAATATCATTCTCAAATACT<br>TACAGGAGTAAATGA**G**AGCTGGAAAAAGCGTTTCATTTCTCTC<br>CTGAGCTGTTTCAACCAGCATACGAAGTGGACC | 4281 |
| | TTCCAGCT**C**TCATTTAC | 4282 |
| | GTAAATGA**G**AGCTGGAA | 4283 |
| Alzheimer disease<br>Gly384Ala<br>GGA-GCA | GTGACCAACTTTTTAATATTTGTAACCTTTCCTTTTTAGGGGGA<br>GTAAAACTTGGATTGG**G**AGATTTCATTTTCTACAGTGTTCTGG<br>TTGGTAAAGCCTCAGCAACAGCCAGTGGAGACTG | 4284 |
| | CAGTCTCCACTGGCTGTTGCTGAGGCTTTACCAACCAGAACA<br>CTGTAGAAAATGAAATCT**C**CCAATCCAAGTTTTACTCCCCCTA<br>AAAAGGAAAGGTTACAAATATTAAAAAGTTGGTCAC | 4285 |
| | TGGATTGG**G**AGATTTCA | 4286 |
| | TGAAATCT**C**CCAATCCA | 4287 |
| Alzheimer disease<br>Ser390Ile<br>AGT-ATT | TTTGTAACCTTTCCTTTTTAGGGGGAGTAAAACTTGGATTGGG<br>AGATTTCATTTTCTACA**G**TGTTCTGGTTGGTAAAGCCTCAGCA<br>ACAGCCAGTGGAGACTGGAACACAACCATAGCCTG | 4288 |
| | CAGGCTATGGTTGTGTTCCAGTCTCCACTGGCTGTTGCTGAG<br>GCTTTACCAACCAGAACA**C**TGTAGAAAATGAAATCTCCCAATC<br>CAAGTTTTACTCCCCCTAAAAAGGAAAGGTTACAAA | 4289 |
| | TTTCTACA**G**TGTTCTGG | 4290 |
| | CCAGAACA**C**TGTAGAAA | 4291 |
| Alzheimer disease<br>Leu392Val<br>tCTG-GTG | AACCTTTCCTTTTTAGGGGGAGTAAAACTTGGATTGGGAGATT<br>TCATTTTCTACAGTGTT**C**TGGTTGGTAAAGCCTCAGCAACAGC<br>CAGTGGAGACTGGAACACAACCATAGCCTGTTTCG | 4292 |
| | CGAAACAGGCTATGGTTGTGTTCCAGTCTCCACTGGCTGTTG<br>CTGAGGCTTTACCAACCA**G**AACACTGTAGAAAATGAAATCTCC<br>CAATCCAAGTTTTACTCCCCCTAAAAAGGAAAGGTT | 4293 |
| | ACAGTGTT**C**TGGTTGGT | 4294 |
| | ACCAACCA**G**AACACTGT | 4295 |
| Alzheimer disease<br>Asn405Ser<br>AAC-AGC | ATTTCATTTTCTACAGTGTTCTGGTTGGTAAAGCCTCAGCAAC<br>AGCCAGTGGAGACTGGA**A**CACAACCATAGCCTGTTTCGTAGC<br>CATATTAATTGTAAGTATACACTAATAAGAATGTGT | 4296 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | ACACATTCTTATTAGTGTATACTTACAATTAATATGGCTACGAA ACAGGCTATGGTTGTGTTCCAGTCTCCACTGGCTGTTGCTGA GGCTTTACCAACCAGAACACTGTAGAAAATGAAAT | 4297 |
| | AGACTGGAACACAACCA | 4298 |
| | TGGTTGTGTTCCAGTCT | 4299 |
| Alzheimer disease Ala409Thr aGCC-ACC | TACAGTGTTCTGGTTGGTAAAGCCTCAGCAACAGCCAGTGGA GACTGGAACACAACCATAGCCTGTTTCGTAGCCATATTAATTG TAAGTATACACTAATAAGAATGTGTCAGAGCTCTTA | 4300 |
| | TAAGAGCTCTGACACATTCTTATTAGTGTATACTTACAATTAAT ATGGCTACGAAACAGGCTATGGTTGTGTTCCAGTCTCCACTG GCTGTTGCTGAGGCTTTACCAACCAGAACACTGTA | 4301 |
| | CAACCATAGCCTGTTTC | 4302 |
| | GAAACAGGCTATGGTTG | 4303 |
| Alzheimer disease Cys410Tyr TGT-TAT | GTGTTCTGGTTGGTAAAGCCTCAGCAACAGCCAGTGGAGACT GGAACACAACCATAGCCTGTTTCGTAGCCATATTAATTGTAAG TATACACTAATAAGAATGTGTCAGAGCTCTTAATGT | 4304 |
| | ACATTAAGAGCTCTGACACATTCTTATTAGTGTATACTTACAAT TAATATGGCTACGAAACAGGCTATGGTTGTGTTCCAGTCTCCA CTGGCTGTTGCTGAGGCTTTACCAACCAGAACAC | 4305 |
| | CATAGCCTGTTTCGTAG | 4306 |
| | CTACGAAACAGGCTATG | 4307 |
| Alzheimer disease Ala426Pro tGCC-CCC | TGTGAATGTGTGTCTTTCCCATCTTCTCCACAGGGTTTGTGCC TTACATTATTACTCCTTGCCATTTTCAAGAAAGCATTGCCAGCT CTTCCAATCTCCATCACCTTTGGGCTTGTTTTCT | 4308 |
| | AGAAAACAAGCCCAAAGGTGATGGAGATTGGAAGAGCTGGCA ATGCTTTCTTGAAAATGGCAAGGAGTAATAATGTAAGGCACAA ACCCTGTGGAGAAGATGGGAAAGACACACATTCACA | 4309 |
| | TACTCCTTGCCATTTTC | 4310 |
| | GAAAATGGCAAGGAGTA | 4311 |
| Alzheimer disease Pro436Gln CCA-CAA | AGGGTTTGTGCCTTACATTATTACTCCTTGCCATTTTCAAGAA AGCATTGCCAGCTCTTCCAATCTCCATCACCTTTGGGCTTGTT TTCTACTTTGCCACAGATTATCTTGTACAGCCTTT | 4312 |
| | AAAGGCTGTACAAGATAATCTGTGGCAAAGTAGAAAACAAGC CCAAAGGTGATGGAGATTGGAAGAGCTGGCAATGCTTTCTTG AAAATGGCAAGGAGTAATAATGTAAGGCACAAACCCT | 4313 |
| | AGCTCTTCCAATCTCCA | 4314 |
| | TGGAGATTGGAAGAGCT | 4315 |
| Alzheimer disease Pro436Ser tCCA-TCA | CAGGGTTTGTGCCTTACATTATTACTCCTTGCCATTTTCAAGA AAGCATTGCCAGCTCTTCCAATCTCCATCACCTTTGGGCTTGT TTTCTACTTTGCCACAGATTATCTTGTACAGCCTT | 4316 |
| | AAGGCTGTACAAGATAATCTGTGGCAAAGTAGAAAACAAGCC CAAAGGTGATGGAGATTGGAAGAGCTGGCAATGCTTTCTTGA AAATGGCAAGGAGTAATAATGTAAGGCACAAACCCTG | 4317 |
| | CAGCTCTTCCAATCTCC | 4318 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GGAGATTGGAAGAGCTG | 4319 |

## EXAMPLE 25
## Alzheimer's Disease - presenilin-2 (PSEN2)

The attached table discloses the correcting oligonucleotide base sequences for the PSEN2 oligonucleotides of the invention.

**Table 32**
**PSEN2 Mutations and Genome-Correcting Oligos**

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| Alzheimer disease<br>Arg62His<br>CGC-CAC | GATGTGGTTTCCCACAGAGAAGCCAGGAGAACGAGGAGGAC<br>GGTGAGGAGGACCCTGACCGCTATGTCTGTAGTGGGGTTCC<br>CGGGCGGCCGCCAGGCCTGGAGGAAGAGCTGACCCTCAA | 4320 |
| | TTGAGGGTCAGCTCTTCCTCCAGGCCTGGCGGCCGCCCGGG<br>AACCCCACTACAGACATAGCGGTCAGGGTCCTCCTCACCGTC<br>CTCCTCGTTCTCCTGGCTTCTCTGTGGGAAACCACATC | 4321 |
| | CCCTGACCGCTATGTCT | 4322 |
| | AGACATAGCGGTCAGGG | 4323 |
| Alzheimer disease<br>Thr122Pro<br>cACG-CCG | GCCTCGAGGAGCAGTCAGGGCCGGGAGCATCAGCCCTTTGC<br>CTTCTCCCTCAGCATCTACACGACATTCACTGAGGACACACC<br>CTCGGTGGGCCAGCGCCTCCTCAACTCCGTGCTGAACA | 4324 |
| | TGTTCAGCACGGAGTTGAGGAGGCGCTGGCCCACCGAGGGT<br>GTGTCCTCAGTGAATGTCGTGTAGATGCTGAGGGAGAAGGCA<br>AAGGGCTGATGCTCCCGGCCCTGACTGCTCCTCGAGGC | 4325 |
| | GCATCTACACGACATTC | 4326 |
| | GAATGTCGTGTAGATGC | 4327 |
| Alzheimer disease<br>Asn141Ile<br>AAC-ATC | ACACGCCATTCACTGAGGACACACCCTCGGTGGGCCAGCGC<br>CTCCTCAACTCCGTGCTGAACACCCTCATCATGATCAGCGTC<br>ATCGTGGTTATGACCATCTTCTTGGTGGTGCTCTACAA | 4328 |
| | TTGTAGAGCACCACCAAGAAGATGGTCATAACCACGATGACG<br>CTGATCATGATGAGGGTGTTCAGCACGGAGTTGAGGAGGCG<br>CTGGCCCACCGAGGGTGTGTCCTCAGTGAATGGCGTGT | 4329 |
| | CGTGCTGAACACCCTCA | 4330 |
| | TGAGGGTGTTCAGCACG | 4331 |
| Alzheimer disease<br>Met239Ile<br>ATGg-ATA | CCACTGGAAGGGCCCTCTGGTGCTGCAGCAGGCCTACCTCA<br>TCATGATCAGTGCGCTCATGGCCCTAGTGTTCATCAAGTACCT<br>CCCAGAGTGGTCCGCGTGGGTCATCCTGGGCGCCATC | 4332 |

| Clinical Phenotype & Mutation | Correcting Oligos | SEQ ID NO: |
|---|---|---|
| | GATGGCGCCCAGGATGACCCACGCGGACCACTCTGGGAGGT ACTTGATGAACACTAGGGCCATGAGCGCACTGATCATGATGA GGTAGGCCTGCTGCAGCACCAGAGGGCCCTTCCAGTGG | 4333 |
| | GCGCTCATGGCCCTAGT | 4334 |
| | ACTAGGGCCATGAGCGC | 4335 |
| Alzheimer disease Met239Val cATG-GTG | ATCCACTGGAAGGGCCCTCTGGTGCTGCAGCAGGCCTACCT CATCATGATCAGTGCGCTCATGGCCCTAGTGTTCATCAAGTA CCTCCCAGAGTGGTCCGCGTGGGTCATCCTGGGCGCCA | 4336 |
| | TGGCGCCCAGGATGACCCACGCGGACCACTCTGGGAGGTAC TTGATGAACACTAGGGCCATGAGCGCACTGATCATGATGAGG TAGGCCTGCTGCAGCACCAGAGGGCCCTTCCAGTGGAT | 4337 |
| | GTGCGCTCATGGCCCTA | 4338 |
| | TAGGGCCATGAGCGCAC | 4339 |

## EXAMPLE 26
## Plant Cells

The oligonucleotides of the invention can also be used to repair or direct a mutagenic event in plants and animal cells. Although little information is available on plant mutations amongst natural cultivars, the oligonucleotides of the invention can be used to produce "knock out" mutations by modification of specific amino acid codons to produce stop codons (e.g., a CAA codon specifying Gln can be modified at a specific site to TAA; a AAG codon specifying Lys can be modified to UAG at a specific site; and a CGA codon for Arg can be modified to a UGA codon at a specific site). Such base pair changes will terminate the reading frame and produce a defective truncated protein, shortened at the site of the stop codon. Alternatively, frameshift additions or deletions can be directed into the genome at a specific sequence to interrupt the reading frame and produce a garbled downstream protein. Such stop or frameshift mutations can be introduced to determine the effect of knocking out the protein in either plant or animal cells.

All publications and patent applications cited in this specification are herein incorporated by reference as if each individual publication or patent application were specifically and individually indicated to be incorporated by reference. Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it will be readily apparent to those of ordinary skill in the art in light of the teachings of this invention that certain changes and modifications may be made thereto without departing from the spirit or scope of the appended claims.